

JPRS 80444

30 March 1982

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 136



FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

30 March 1982

WORLDWIDE REPORT
NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 136

CONTENTS

WORLDWIDE AFFAIRS

- Soviet Union, Finland Sign Nuclear Research Pact
(UUSI SUOMI, 6 Feb 82)..... 1

ASIA

AUSTRALIA

- Nuclear Safeguards Agreement Concluded With Japanese
(THE AGE, 20, 25 Jan 82, THE AUSTRALIAN, 21 Jan 82)..... 3
- Successful Negotiations
Denial of 'Concessions'
Analysis of Accord, by Hamish McDonald
- Tokyo Delay in Signing Nuclear Agreement Explained
(Scott Milson; THE SYDNEY MORNING HERALD, 9 Jan 82)..... 5
- U.S. Aid Reopens Foreign Bidding for Enrichment Contract
(Nicholas Rothwell; THE AUSTRALIAN, 19 Jan 82)..... 6
- AEC in Shake-Up; Environmental Study Program Planned
(Nicholas Rothwell; THE AUSTRALIAN, 1 Feb 82)..... 7
- Anti-Nuclear Groups Plan Civil Disobedience Protests
(Nicholas Rothwell, Peter Blunden; THE AUSTRALIAN,
26 Jan 82)..... 8
- Tasmanian Premier Rules Out Nuclear Power Development
(Buzz Kennedy; THE AUSTRALIAN, 26 Jan 82)..... 9

Mary Kathleen Uranium Mine May Shut Down Ahead of Schedule (THE AUSTRALIAN, 26 Jan 82).....	10
Union Vows To Continue Anti-Uranium Mining Campaign (Bret Harris; THE AUSTRALIAN, 20 Jan 82).....	11
New Uranium Mine Gets Go-Ahead But Company Delays Start (Nigel Wilson; THE AGE, 19 Jan 82).....	12
Anti-Nuclear Group Seeks To Bar Minatome Uranium Mining (Nicholas Rothwell; THE AUSTRALIAN, 12 Jan 82).....	13

INDIA

Parliament Assured on Delhi Nuclear Policy (PATRIOT, 20 Feb 82).....	15
Reporter Reviews U.S.-Delhi Exchanges on Nuclear Policy (N. Ram; THE HINDU, 22 Feb 82).....	16
Delay in Spare Parts for Tarapur Plant (AFP, 14 Mar 82).....	18
Nuclear Waste Dumped on Open Ground (AFP, 9 Mar 82).....	20
India Protests IAEA Director General's Remarks (THE HINDU, 25 Feb 82).....	21
Plans, Details for Fifth Nuclear Plant Given (THE TIMES OF INDIA, 15 Feb 82).....	22
Briefs	
Tarapur Pact Discussed	23
Doubts on Technology	23
Heavy Water Production	24
New Thorium Plant	24

PAKISTAN

Briefs	
Findings of Team Reported	25

PHILIPPINES

Bataan Reactor Seen as World's Most Dangerous Nuclear Plant (Charles Avila; BUSINESS TIMES, 17 Feb 82).....	26
--	----

EAST EUROPE

INTERNATIONAL AFFAIRS

Cooperation With Dubna Nuclear Research Institute Described (Ivan Ulehla; POKROKY MATEMATIKY, FYZIKY A ASTRONOMIE, No 6, 1981).....	28
---	----

LATIN AMERICA

ARGENTINA

Concern Over Nuclear Weapons Capability Discussed (Martin F. Yriart; ENERGIA, Feb 82).....	33
CNEA Chairman on Nuclear Waste Dumping (NOTICIAS ARGENTINAS, 16 Mar 82).....	37

BRAZIL

Reportage on Angra-I Entry Into Operation (O ESTADO DE SAO PAULO, various dates).....	38
Preheating System Problem Effect on Energy Rates Fission Imminent Tests Proceeding Normally	
Production of Pocos de Caldas Industrial Complex Discussed (VISAO, 22 Feb 82).....	44
Briefs Power Generating Plants	46

SUB-SAHARAN AFRICA

SOUTH AFRICA

Briefs Transportation of Irradiated Fuel Uranium Mine Opened	47 47
--	----------

WEST EUROPE

FEDERAL REPUBLIC OF GERMANY

Construction of Waste Storage Facility in Gorleben Approved
(DER SPIEGEL, 11 Jan 82)..... 48

Interim Storage
Opposition in Gorleben

Environmentalists Question Safety of Waste Storage
(Eckart Spoo; FRANKFURTER RUNDSCHAU, 3 Feb 82)..... 60

Briefs
Funds for Fast Breeder 62

FINLAND

Briefs
Nuclear Waste Law Debated 63

GREECE

. Briefs
Nuclear Energy Policy 64

SOVIET UNION, FINLAND SIGN NUCLEAR RESEARCH PACT

Helsinki UUSI SUOMI in Finnish 6 Feb 82 p 40

[Article: "Research Program on Atomic Energy"]

[Text] Deputy Chairman I. G. Morozov of the GKAE [Soviet State Committee for the Use of Atomic Energy] and Finnish Trade and Industry Minister Pirkko Tyolajarvi signed a scientific-technical program of cooperation for the years 1981--1982 between the GKAE and the KTM [Finnish Ministry of Trade and Industry] in Helsinki on Friday.

An agreement was reached on an exchange of research projects, expertise, and information in the form of reciprocally arranged seminars and symposiums.

On the Finnish side several organizations will participate in the program. It will include many research institutes and colleges as well as Imatra Power among the enterprises. This is a continuation of the scientific-technical cooperation begun in the fall of 1977 in the area of the peaceful use of atomic energy.

One of the joint research projects is the observation of radioactivity in the Baltic Sea, on which an agreement was reached between the Radiation Safety Institute and the Leningrad Khlopin Institute. Another significant project is the study on the fuel used in the Soviet VVER-type reactor.

With respect to this fuel Imatra Power has together with the GKAE worked out a detailed work program, the purpose of which is to increase information on the behaviour of the fuel in the reactor and safety questions connected with it as well as to report on experiences connected with the use of this fuel.

In the area of research the program on cooperation has been expanded by including in it cooperation between Helsinki Technical College and the Physics Institute of Turku University and the Moscow-based Kurchatov Research Center, which is under the GKAE.

The joint research projects will include the development of special equipment for measuring magnetic fields as well as basic research on the properties of hydrogen. In both countries the research on these specialized fields represents the highest level of international research.

In addition to these research projects, bilateral seminars will be held on the treatment of radioactive waste and on questions concerning the development of fuel for the Soviet 1000-megawatt nuclear power plant.

During his week-long visit Deputy Chairman Morozov conducted discussions with representatives of the Ministry of Trade and Industry, Imatra Power, and the Radiation Safety Institute.

His visit to Finland included trips to the nuclear power plant at Loviisa, Wartsila's Helsinki Shipyard, and other institutes involved in this cooperative program.

10576

CSO: 5100/2091

NUCLEAR SAFEGUARDS AGREEMENT CONCLUDED WITH JAPANESE

Successful Negotiations

Melbourne THE AGE in English 20 Jan 82 p 3

[Text]

CANBERRA. — Australia and Japan yesterday concluded protracted negotiations over a nuclear safeguards agreement between the two countries.

The Australia-Japan Nuclear Safeguards Agreement was initialled in Canberra by representatives of the Governments.

Negotiations of the agreement with Japan have been drawn out and difficult because of Japanese resistance to some of the more strenuous requirements of the Australian Government.

Details of the agreement will not be released until it is tabled for debate in the Japanese Diet

(Parliament) during its present session. A Foreign Affairs Department spokesman was yesterday unable to say whether the agreement was any weaker in its inspection requirements than the previous nine agreements signed by Australia.

He said: "The Government is satisfied it incorporates all the Australian Government nuclear safeguard requirements."

Japan is expected to become Australia's main customer for uranium. ERA, the operators of the Ranger uranium mine have a contract to export a total of 13,413 tonnes to Japan between March 1982 and 1986.

Denial of 'Concessions'

Canberra THE AUSTRALIAN in English 21 Jan 82 p 11

[Text]

THE Federal Government has reacted sharply to suggestions it made major concessions to pave the way for a nuclear safeguards agreement with Japan.

Press reports, apparently based on an official Japanese Government briefing, said Australia had been forced to make the concessions by a serious world-wide oversupply of uranium.

The reports said Australia's major concession had been to drop

its insistence on prior consent to the reprocessing of Australian-origin yellowcake.

A spokesman for the department firmly denied the Japanese press reports last night.

He said Australia adhered to the requirement of prior approval for the reprocessing, transfer and enrichment of Australian origin nuclear material.

The agreement with Japan had been negotiated in full accordance with the Australian policy requirements as in the safeguard pacts with other countries.

Analysis of Accord

Melbourne THE AGE in English 25 Jan 82 p 17

[Article by Hamish McDonald]

[Text] When Australian and Japanese officials initialled the long-awaited nuclear safeguards agreement between their two countries last week, political sell took over from diplomatic bargaining in Tokyo.

The acting deputy secretary of the Australian Foreign Affairs Department and the Japanese Embassy's Minister, Mr Tajima, had scarcely risen from their chairs in Canberra on Tuesday afternoon before briefing mechanisms swung into operation here.

What appeared in the Japanese Press the next morning left Australian officials distinctly uneasy: the majority of reports either stated or implied major retreats by the Australian Government to bring the three-and-a-half-year negotiations to a close.

While simple misunderstandings were also clearly involved, the prevalent tone was worrying enough for Australian Embassy officials to raise it with Japanese Government agencies.

With the formal signing of the agreement coming up in a month or two, followed by ratification in the Parliaments of the two countries, each Government clearly has an interest in conveying the impression of having won the arguments.

The document, which is an amendment to the 1972 nuclear co-operation agreement between Japan and Australia of 1972, is being tightly held pending study by the two Governments, so precise evaluation of any concession that might have been made is not yet possible.

However, all public information suggests that prior consent of reprocessing was the most troublesome sticking point during

the seven rounds of negotiations that followed Canberra's tightening of safeguards over uranium exports following the 1976 Ranger inquiry.

Looking ahead to widespread use of fast-breeder and advanced thermal reactors using plutonium oxide fuel created from the spent fuel of conventional reactors, Japan sees such reprocessing as a critical element in achieving an independent nuclear fuel cycle.

The breakthrough came with the report in 1980 of the International Nuclear Fuel Cycle Evaluation (INFCE), in which Australia participated.

The study approved use of plutonium and called for stable and predictable international fuel arrangements. About the same time, Japan agreed to strengthened international inspection of its nuclear facilities.

The subsequent concession, announced in Federal Parliament by the Foreign Minister Mr Street in November 1980, was the main factor in breaking the deadlock with Japan, even though it has taken more than a year to negotiate details.

This modification of safeguards policy allowed prior consent for reprocessing to be given on a "programme" basis — that is, for a long-term sequence of fuel-cycle operations instead of batch by batch.

The agreement accommodates the new programme approach, but does not include specific consent for reprocessing.

However, one report here in the power industry newspaper 'Denki Shimbun', confirmed as accurate by knowledgeable sources, indicates that broad agreements have been reached already on reprocessing of Australian uranium by Japan.

The newspaper said the programme consent would cover re-

processing at the Tokaimura plant north of Tokyo by the Government's power reactor and nuclear fuels development corporation, and reprocessing in France and Britain for Japan.

It also referred to highly secret plans being drawn up for a second reprocessing plant in Japan, to be controlled and financed by private industry.

This facility has not been included in the broad understanding surrounding the safeguards agreement, the paper said. "Yet Australia agreed in principle to include that when the situation becomes more concrete about it," the newspaper said.

Officials of the Japanese Foreign Ministry declined to comment specifically on this report, but said that the "good understanding and feeling" between the two Governments on nuclear issues was distinct from the precise treaty formulations.

Australia had not given any "carte blanche" to Japan, one senior official said, but had reflected the international consensus reached by the INFCE in its revised safeguards requirements.

Even so, the Australian safeguards agreement is regarded in Japan as a significant improvement on its existing batch-by-batch arrangements with Canada and the United States, other major suppliers of nuclear fuel.

Japan has already begun negotiations with Canada to try to incorporate a programme approach into their 1980 nuclear agreement, and plans to use the Australian arrangement as a model for Canada to follow.

The agreement with Canada will also be used to pressure Washington, which Japan sees as more favorably inclined to the plutonium cycle under President Reagan, to give long-term reprocessing approvals.

CSO: 5100/7513

TOKYO DELAY IN SIGNING NUCLEAR AGREEMENT EXPLAINED

(Sydney) THE SYDNEY MORNING HERALD in English 9 Jan 82 p 5

(Article by Scott Milson)

(Text)

CANBERRA. — Japan is holding up final agreement on a nuclear safeguards treaty because Australia insists on significantly tougher checks on reprocessing than those required by the US and Canada, six government sources.

The delay, after more than two years and seven full rounds of negotiations, seems certain to disrupt the planned export to Japan, starting in March, of uranium valued at about \$70 million from the Ranger partners.

There is little chance that a safeguards agreement with Japan will be signed and ratified before mid-year at the earliest.

Although the reasons for the delay has been publicly identified by the Japanese as the severity of the general Australian terms of, an agreement, it is now clear that the

specific hurdle concerns the restraints on reprocessing.

In essence, Japan objects to having to divulge extensive details about its reprocessing program and to Australia's right of veto if the program is altered without Australian compliance.

Reprocessing is a chemical operation that recovers unused uranium from a reactor and in the process separates plutonium (essential for weapons) and high-level nuclear waste.

Australia has signed 10 safeguard agreements covering the export of uranium to 16 countries, but the agreement with Japan is seen as the centrepiece of the export policy because Japan is the biggest potential customer.

In December, 1980, the Federal Government finally announced that under strict conditions it would allow Australian uranium to be reprocessed.

Australia permits reprocessing in selected countries by giving consent in advance when the purpose is for energy generation or waste management, and on a case-by-

case basis when the purpose is for research.

But in each case Australia requires a detailed outline of the program and further insists that any change in the program must meet with Australian agreement.

If Australia does not consent to any changes, it can stop exports.

Australia, contrary to reports circulated even by official Japanese sources, does not insist on any rights of inspection to ensure compliance with its safeguards.

Compliance with the fundamental requirement that the uranium be used for peaceful purposes only is the responsibility of the International Atomic Energy Agency, which insists on first-hand inspections.

Australia does insist, however, on "tracking" its uranium by documentation throughout its active life.

Neither the US nor Canada, Japan's other, big uranium suppliers, require such extensive checks.

U.S. AID REOPENS FOREIGN BIDDING FOR ENRICHMENT CONTRACT

Canberra THE AUSTRALIAN in English 19 Jan 82 p 2

[Article by Nicholas Rothwell]

[Text]

AUSTRALIA will next week become the first country to share highly classified American nuclear enrichment technology when a US team presents an offer of sale to the government-approved consortium developing our first uranium enrichment plant.

The offer of the latest US technology was made possible by President Reagan, who cleared the way for US firms to export nuclear technology after reviewing Australia's excellent track record on control of its nuclear exports.

The American offer has once more thrown open the contest between foreign companies to win the lucrative Australian contract, since the latest US enrichment methods are regarded as highly competitive and economical.

The consortium, the Uranium Enrichment Group of Australia - CSR, BHP, WMC and Peko-Wallsend - has Federal Government backing, but its choice of supplier must be approved by the Minister for Energy and National Development, Senator Carrick.

It has offers from the US, France, Japan, and a joint Dutch, British and German group.

The consortium's chairman, Dr Bob Ward, said yesterday latest studies showed the project was still economically attractive. Delays in selecting

the enrichment method had been caused by the new offer of Japanese and American technologies.

Foreign enrichment suppliers have been touring Australia in recent months promoting technologies for the plant, which represents a contract worth several hundred million dollars.

Australian uranium would be worth double what it now sells for if it was enriched before sale.

Dr Ward said the early favorite for the contract, the European Urenco-Centec consortium, which has close links with the South Australian Government, was still under consideration.

Japanese press reports that the consortium had chosen the Urenco-Centec group were denied by Dr Ward, who said Tokyo had been told only that the Urenco method was "attractive".

The three leading US enrichment companies, Boeing, Goodrich and Garrett, are all sending delegations here to brief the Australian consortium next week.

"The economics of the whole project depend on the selling price of enriched fuel, but the plant is still attractive - if it ever became uneconomic we would drop it like a hot cake," Dr Ward said.

The enrichment proposal has been criticised by environmental groups, academics and the ACTU.

AEC IN SHAKE-UP; ENVIRONMENTAL STUDY PROGRAM PLANNED

Canberra THE AUSTRALIAN in English 1 Feb 82 p 3

[Article by Nicholas Rothwell]

[Text]

A NEW environmental program which will perform essential research for the uranium industry on the effects of mining in the Northern Territory will be announced this week by the Australian Atomic Energy Commission.

The commission, which has been reorganised by the Federal Government, also announced that its surviving staff will now be headed by Professor Stuart Butler, who is director of its Lucas Heights nuclear research establishment.

His appointment follows the retirement last month of Mr Ken Alder, the commission's former general manager and one of Australia's pioneering nuclear scientists.

The shake-up of the commission's structure is the result of a new set of arrangements for government energy research, unveiled last April by the Prime Minister, Mr Fraser, under which all atomic energy research will be carried out at the Lucas Heights laboratories, near Sydney.

Although the commission's operations have been cut back,

a series of important energy programs — all in the nuclear field — will be launched, and the commission's production of supplies for nuclear medicine will continue.

The new centre will form part of a science complex to be known as the Lucas Heights Research Laboratories, and researchers in the commission who specialise in non-nuclear energy research will be transferred to the CSIRO laboratories in the same centre.

The reorganisation at the commission was seen as a down-grading of nuclear energy research and development, because Mr Fraser's speech disclosing the move to Lucas Heights also gave notice of the eventual closure of the commission's Sydney head office.

"The commission has reviewed its program and organisation to meet the Government's energy research requirements, to ensure its role as a first-class nuclear science and technology organisation," a spokesman said yesterday.

The main research at Lucas Heights will centre on "aspects of the uranium fuel cycle related to fission and nuclear power development".

CSO: 5100/7514

ANTI-NUCLEAR GROUPS PLAN CIVIL DISOBEDIENCE PROTESTS

Canberra THE AUSTRALIAN in English 26 Jan 82 p 3

[Article by Nicholas Rothwell and Peter Blunden]

[Text]

THE uranium mining industry is facing its first serious challenge from organised protesters prepared to block projects by using "passive civil disobedience" methods - including the occupation of mine sites.

Confidential plans have been drawn up by a coalition of anti-nuclear protest groups to block the pioneering Honeymoon uranium development in South Australia, approved late last year by the Federal Government.

The coalition's tactics include an occupation of the mine-site, planned for May, to prevent development taking place, and a blockade to stop the entry to the prospect area of vital supplies and equipment.

The groups mounting the protest, the Campaign Against Nuclear Energy and Friends of the Earth, expect hundreds of anti-uranium lobbyists to converge on the Honeymoon site, 75km north-west of Broken Hill.

The protest will pose a major problem for the South Australian

Government, which is already struggling to push approval for the giant Roxby Downs uranium mine through Parliament. An occupation could force the Premier, Mr Tonkin, to take police action to clear the site.

Opposition to the project stems from its use of a mining technique which the anti-nuclear movement believes to be "potentially dangerous" and still in its experimental stages.

The Honeymoon mine project is managed by a subsidiary of CSR, although the major stake in the venture is held by Mount Isa Mining. It will be the first uranium deposit in Australia to be mined by a new technique, known as "in situ leaching".

This method involves the pumping of water into holes drilled into the shallow

uranium deposit. The uranium is separated from surrounding minerals by a chemical process. The water is then pumped back to the surface and conveyed in sealed pipes to a processing plant for recovery of the uranium.

The protest groups aim to stop the Honeymoon project and, subsequently, all other uranium development in Australia, as the next major environmentalist objective.

A spokesman for Friends of the Earth, Mr John Hallam, said yesterday the leaching method had caused environmental problems in the US and the Honeymoon project was a "trial run" for future mines in Australia using the same extraction method.

PILOT

A CSR spokesman confirmed

the project was a pilot plant but said the leaching method had less environmental effect than any other uranium extraction technique. He stressed the plant would operate "within approved safety standards".

Friends of the Earth recently affirmed that uranium mines would "go the same way as whaling stations and lead in petrol" within the next few years.

The South Australian Government, the Federal Government and the mining companies developing the Honeymoon deposit believe the leaching method to be perfectly safe.

The Honeymoon developers are expected to let construction tenders in the near future.

TASMANIAN PREMIER RULES OUT NUCLEAR POWER DEVELOPMENT

Canberra THE AUSTRALIAN in English 26 Jan 82 p 2

[Article by Buzz Kennedy]

[Text] SHOULD Tasmania go nuclear? It's a fascinating thought — but all the power uranium could generate might not be enough to match the chill of the fear the idea creates emotionally.

Yet the Tasmanian Government and its Hydro-Electric Commission have, in fact, looked at the idea — an obvious alternative to the Franklin River dam plan, which has split the island State into bitter factions.

The Federal Government's announcement on Sunday that it had nominated a large area of Tasmania, including the Franklin-Lower Gordon Wild Rivers National Park, for inclusion in the World Heritage list of protected areas, has refuelled the argument over the Franklin dam plan.

The timing of the announcement by the Minister for Home Affairs and the Environment, Mr Wilson, was obviously heavily political. The Tasmanian Government is expected to announce its decision on the dam and the future of the rivers in the next few days.

The Premier, Mr Holgate, is in no doubt about the politically-loaded nature of Sunday's announcement.

If you can't get Mr Fraser's ear before next month's Premiers' Conference, he told me

yesterday, he'll have a few things to say then.

It should be a lively segment of the conference — which more and more, seems to be turning into a purely political forum.

Why not a nuclear power station, I asked? (I was concluding a pleasant long weekend in Hobart).

It could be tucked out of sight without the visual and atmospheric pollution of the other alternative, a coal-powered station.

"We've looked at it, and our HEC experts have advised us," Mr Holgate said.

"But it just wouldn't be viable. The smallest nuclear power station that would be economical would generate 2000mW — and we can see only a long-term need for 180mW."

But they'll also be looking at a more intriguing alternative — wind power.

"Nothing can be done to harness the wind quickly enough to meet immediate needs," he said.

"But we're looking at plans for wind-powered generators on islands just off the southern coast which could bring some interesting results by about the year 2000."

And, of course, there's no lack of wind in Tasmania.

"That's right," he said. "The Roaring Forties are still roaring."

As they say, it's an ill wind ...

MARY KATHLEEN URANIUM MINE MAY SHUT DOWN AHEAD OF SCHEDULE

Canberra THE AUSTRALIAN in English 26 Jan 82 p 34

[Text]

THE massive drop in profit of Mary Kathleen Uranium Ltd from \$11.16 million to \$1.74 million is only the tip of the yellowcake as far as the future of the CRA Ltd-owned miner is concerned.

After a year of woe which saw continued action against the group and the halting of exports for almost six months, the profit drop was to be expected.

But perhaps the most unsatisfactory part of the statement from MKU yesterday was in the last paragraph of its report to the stock exchanges.

That paragraph said: "Expenditure during the quarter on exploration in areas outside the Mary Kathleen mining lease (in Queensland) was \$113,446. Exploration expenditure within the Mary Kathleen mining lease was \$30,504. No mineralisation of economic significance was found."

The failure to find any new economically viable uranium mineralisation must go close to putting the final nail in the coffin for the MKU mine.

Back at the annual meeting of the group in April last year, MKU chairman,

Mr J.L. Liebelt, told shareholders that the mine might have to close a year and a half ahead of schedule because of the decline in spot uranium prices.

That would mean the mine would close in mid-1983. A previous timetable envisaged the mine staying open at least until late 1984 by selling 1200 tonnes of contained uranium oxide not already committed.

But the drop in the spot price threw into doubt the company's ability to sell all or part of the 1200 tonnes at the low price of \$US25 (\$22.50) a lb which, in any case, was uneconomic.

Moreover, high interest rates, increased mining costs and the instability of the market also made it uneconomic to produce uranium for stockpiling.

An attempt to give the mine an economic life, the company did launch into an active exploration program in surrounding areas of the existing mine, but as the report yesterday indicated, no success had been encountered.

That would appear to indicate that the life of the mine is unlikely to be extended past that already expected by the group.

CSO: 5100/7513

UNION VOWS TO CONTINUE ANTI-URANIUM MINING CAMPAIGN

Canberra THE AUSTRALIAN in English 20 Jan 82 p 2

[Article by Bret Harris]

[Text]

THE Australian Telecommunications Employees Association is to maintain its industrial campaign against Minatome, the French company which plans to mine uranium near Townsville in north Queensland.

The Queensland secretary of the ATEA, Mr Ian McLean, said yesterday that the Federal Government and the uranium lobby had fostered the impression that the trade union movement had abandoned its opposition to the mining of uranium.

Certain industrial bans had been relaxed, but only because of the difficulty in implementing them.

He said: "To expect that a campaign of this type will be easy to implement is unrealistic, but it should not be assumed the unions have thrown in the towel."

"It is necessary for the methods and tactics to

be reviewed to improve union effectiveness in the future."

The association was trying to change the emphasis of the campaign to prevent new sites from being developed.

It was much easier to stop mines getting off the ground than to try and close down operations which were employing people.

"The Ben Lomond site, near Townsville, offers the best opportunity for union action to prevent a mining operation's getting off the ground," he said.

"Already several unions have applied bans designed to deny Minatome the communications services and power they need to make the mine operational."

The Townsville community had experienced fallout from French testing in the Pacific, and were especially opposed to a mining operation wholly controlled by a French company.

CSO: 5100/7513

NEW URANIUM MINE GETS GO-AHEAD BUT COMPANY DELAYS START

Melbourne THE AGE in English 19 Jan 82 p 3

[Article by Nigel Wilson]

[Text]

PERTH. — The Federal Government has given formal approval for the development of Australia's fifth uranium mine but the companies which own it have made no commitment to go ahead.

The Deputy Prime Minister, Mr Anthony, yesterday announced approval for the Lake Way project near Wiluna in Western Australia. He said the project was expected to begin producing in 1984 and to yield about 4000 tonnes of uranium oxide over six to eight years.

Lake Way is a joint venture between Delhi—a newly acquired subsidiary of the Australian CSR group — and the small Melbourne registered, Sydney-based exploration group, Vam Limited. CSR took over Delhi International, of Houston, late last year in a \$520 million deal. It was Australia's biggest corporate takeover.

It has run into problems in Western Australia, particularly from the Wiluna Aboriginal community, which claims that development of the small low-grade deposit would ruin water supplies essential for the main Aboriginal project, a 70-hectare citrus orchard.

The project would also threaten a plan to start the world's first emu farm, a scheme already under threat through lack of financing from the Commonwealth Government.

Mr Anthony's announcement took the companies by surprise.

A deputy general manager of

CSR, Mr A. J. Campbell, said: "I am not rubbishing Mr Anthony's statement but no investment decision has been taken." A director of Vam Limited, Mr B. E. Capper, said he had not been informed of any plans for Lake Way to go ahead.

Officials in Canberra said it was believed that Aboriginal objections to the Lake Way project had been accommodated by the joint ventures. They acknowledged that it was a prerequisite for uranium mining approval that environmental, foreign investment, and Aboriginal objections be overcome.

Two months ago, CSR said that Lake Way was "on the back burner" and no decision would be taken until it had reviewed what assets it had bought in its Delhi takeover.

Two main problems would impede development: CSR's reluctance to enter into any confrontation with Aborigines following its experience in the Noonkanbah controversy, and the long-stated opposition of the West Australian Trades and Labor Council to new uranium developments.

Lake Way follows Mary Kathleen, Nabarlek, Jabiru and Yeelirrie as Australia's attempts to secure a large part of the international uranium trade.

ANTI-NUCLEAR GROUP SEEKS TO BAR MINATOME URANIUM MINING

Canberra THE AUSTRALIAN in English 12 Jan 82 p 6

[Article by Nicholas Rothwell]

[Text] ONE of Australia's most promising uranium mining prospects has come under fire from the anti-nuclear movement, which yesterday called on the West Australian Government to undertake an exhaustive investigation of an innovative mining technique proposed for use in the State.

The Campaign Against Nuclear Energy, a national lobby group, has demanded that an environmental impact statement should be drawn up before any initial development of a rich uranium deposit at Manyingee is permitted.

But the company which holds the mining prospect at Manyingee, the French-controlled Minatome Australia, yesterday denied it had any immediate plans for operations at the site, and said feasibility studies of mining had not even been

started. The protest group called on the State Minister for Conservation and the Environment, Mr Masters, to request an immediate impact statement from the company before any testing operations began at the deposit, near the town of Onslow.

Mr Masters has the power to order the West Australian Environmental Protection Authority to request a draft statement on the mining development.

Mr Masters said yesterday the group had not made contact with him, but if they were calling for Western Australia to maintain stringent environmental standards, they had no grounds for concern.

"Our State record in environmental protection is second to none, and we intend to continue to take every necessary precaution," he said.

Minatome was not planning to develop the deposit and had only made plans for a small pilot project which would not require envi-

ronmental assessment.

But the protest group has told the minister that a joint venture headed by Minatome will begin operations at the site by May this year, using a new method of extracting uranium ore from the ground.

The company intends to start pumping a leaching solution into the uranium ore body without submitting a report on its expected effects on the environment, the group said.

The group has also told Mr Masters that the technique to be used by Minatome threatens the environment.

But although Minatome holds the mining lease, an initial study followed by an environmental impact statement would be required before mining could be considered, and the company has not yet decided to prepare for mining.

A representative of the protest group, Miss Linda Moltram, said the proposed "in situ leaching" mining method had been developed only recently and was already presenting problems in the United States, where uranium

had escaped from the mining zone into the water table and contaminated the environment.

The method proposed is to be used in the Honeymoon uranium mine in South Australia, which was given final Federal Government approval two months ago.

Officials of Minatome have not made any comment on the protest issued by the group. The company has experienced long delays in development of its Ben Lomond uranium deposit in Queensland because of the process of drafting precise environmental impact statements.

CSO: 5100/7512

PARLIAMENT ASSURED ON DELHI NUCLEAR POLICY

New Delhi PATRIOT in English 20 Feb 82 p 5

[Text]

The Government assured the Parliament on Friday that while being committed to using nuclear energy for peaceful purposes, it will take all necessary steps to safeguard India's security interests, reports UNI.

The danger posed to India by any manufacture of nuclear bomb by Pakistan was highlighted in both the Houses of Parliament during the question hour.

Replying to Mr N K P Salve and Mr S B Chandra in the Rajya Sabha, External Affairs Minister P V Narasimha Rao said the government had already conveyed to Pakistan its concern about certain aspects of Pakistan nuclear programme. But the Pakistani government had repeatedly stated that its nuclear programme was solely directed towards peaceful purposes and hoped the Pakistani leaders would abide by the assurance.

Mr Rao told Mr P M Khan that the government was following the developments on a continuing basis.

He said the government remained committed to using nuclear energy for peaceful purposes, but 'it is also determined to

take all necessary steps to safeguard India's security interests'.

In the Lok Sabha Defence Minister A Venkatarao said the government had taken up with Pakistan at the highest level the reported stockpiling of fissile material by that country for making atom bombs.

He said the government 'is also keeping all developments impinging on the country's security under constant watch for initiating appropriate measures to maintain full defence preparedness'.

Replying to Mr O Narasimha Reddy, the Defence Minister said the government had noted Pakistan's denial of press reports that it would participate in any security consensus sponsored by the United States of that it would give bases to that country.

However, the government was 'keeping the matter under close review'.

He also told the member that there had been no intrusion by US planes in the last four months into India's territorial waters, menacing petroleum exploration activities on the off shore regions.

CSO: 5100/7054

REPORTER REVIEWS U.S.-DELHI EXCHANGES ON NUCLEAR POLICY

Madras THE HINDU in English 22 Feb 82 p 9

[Article by N. Ram]

[Text]

WASHINGTON, Feb. 21.

Papers drawn from the LBJ Library in Austin, Texas, show that India's nuclear capabilities raised some concern in the U.S. as early as the Johnson Administration, within a couple of years of the conclusion of the Tarapur agreement. A "memorandum for the President" from a key adviser, Mr. McGeorge Bundy, dated January 21, 1965, notes that an area identified for "urgent" non-proliferation action was related to the need "to influence the decisions of individual nations, such as India and Japan, which now have the capability of developing nuclear weapons."

A declassified background paper prepared for the U.S. President in connection with Mrs. Gandhi's visit in March, 1966 relates to "Indian nuclear policy". Referring to a reaffirmation by the new Prime Minister of the policy against acquiring nuclear weapons, the document notes that "the issue is quiescent domestically". However, "as Communist China's nuclear weapons programme proceeds, the question of India acquiring nuclear weapons of its own will become more pressing from the standpoint of security, prestige and political considerations."

Chinese threat: Another paper suggests that the Johnson approach with Mrs. Gandhi should give the Indian Government "high praise for its wise policy of resisting pressure to acquire nuclear weapons and for not diverting its economic resources to a nuclear weapons programme". It wants Mrs. Gandhi to be advised that "if a Communist Chinese nuclear capability should ever pose a serious threat to India, she would do well 'frankly (to) discuss the question' with the U.S. — so that it could be approached within the context of nuclear non-proliferation and 'without Indian assumption of the heavy economic and other burdens of a nuclear weapons programme.'"

Those were the days when a PNE was not a four letter word. The record shows that the U.S. has been directly remonstrating with the Government of India, from November,

1970, concerning peaceful nuclear explosions. The response from New Delhi has gone through a few twists, notably at the hands of Mr. Morarji Desai during his innings as Prime Minister. But in general, the official approach initiated by the nuclear establishment and pursued steadfastly by a former External Affairs Ministry specialist, Mr. M. A. Valodi, has refused to deal out assurances to foreign Governments as a matter of principle and policy stance.

Undertaking: Initially, the U.S. effort was directed towards wresting an undertaking that the material and equipment supplied to Tarapur for the material produced from these U.S.-supplied items would not be used for research relating to, or the development of nuclear explosive devices.

At a technical level, any suspicion that the low-enriched uranium or the equipment supplied to Tarapur could be diverted to any activity even remotely connected with nuclear weapons development has always appeared absurd. But in any case, India has had no problem in giving a "reassurance" on this point to the sole supplier.

Sethna's letter: The May, 1974 PNE tremendously raised the level of the concern and controversy, and the subsequent Sethna-Ray official correspondence (unclassified material in Washington) gave formal shape to the Indian position regarding the use and destination of the items supplied to Tarapur. Replying to a letter from Dr. Dixy Lee Ray, then Chairman of the U.S. Atomic Energy Commission, the head of India's nuclear establishment stated in a letter dated September 17, 1974:

"The Government of India would like to assure the Government of the United States of America that the special nuclear material that has been or is hereafter made available for, or used, or produced in the Tarapur atomic power station located at Tarapur will be devoted exclusively to the needs of that station unless our two Governments hereafter

specifically agree that such material be used for other purposes".

The assurance was given very much within the framework of a live fuel supply relationship, but it has been made clear in the 1981 rounds of Tarpur talks that a "unilateral" replay of that kind of formulation in Parliament should not pose a problem. It is this that Mr. Malone has referred to as the U.S. interest in the "non-explosive uses" of the items supplied to Tarpur).

Second shipment: The U.S. made use of the dubious connection with the pending second fuel shipment to raise the PNE issue in early 1981. A *démarche* was made by the U.S. Embassy in New Delhi to the External Affairs Ministry recording the suspicion that India was preparing for, or planning, another PNE. Mr. Eric Gonsalves, Secretary in the External Affairs Ministry, responded on behalf of the Government of India that the conclusions were wrongly drawn from observations at Pokharan, and that there was no decision — "at the present moment" to conduct a PNE.

It was Mr. Malone's pursuit of this discussion in Washington that drew the response of "an assurance in a current time-frame", but "not for any indefinite time-frame".

Assurances sought by the U.S. from India — as a sovereign country with a significant nuclear programme that has not signed the Nuclear Non-Proliferation Treaty (NPT), has

not accepted fullscope safeguards, and has not tied its hands in any way in the general field beyond declaring that the unilateral commitment is to develop nuclear energy for peaceful purposes only — have been a highly sensitive, controversial political issue in recent years.

The realistic "reassurance" given concerning the civilian power generating function of Tarpur is one thing. It clearly flowed from the nature of the agreement, and without it

the fuel supply would, in all probability, have stopped years before it actually did.

But the External Affairs Ministry Secretary appears to have overstepped both the official line concerning a PNE, and the well-known position that the scope of the Tarpur agreement should not be mixed up with "extraneous considerations". (For example, in terms of the 1983 agreement which has the force of an international treaty, acceptance or non-acceptance by India of fullscope safeguards, or preparations or non-preparations for a PNE, should be quite immaterial).

The recent public utterances on the country's nuclear programme by the Prime Minister, the Chairman of the Atomic Energy Commission, the Director of the Bhabha Atomic Research Centre and other official representatives have been collected in a report by the congressional research service for the Senate Foreign Relations Committee. The studious compilation shows that, on March 13, 1980, Mrs. Gandhi told the Rajya Sabha that while India was committed to the peaceful use of nuclear energy, it would not hesitate to undertake explosions or implosions if they were "in the national interest". Four months later, she stated that the Government was not considering a PNE at that time, but "we shall go ahead with it if it is believed to be necessary". The formulation was repeated by a Minister of State in March 1981.

Acting on the principle of unilateralism and paying scant regard to the original commitment or understanding (as between equals), U.S. administrations or Congresses might demand a number of things as the "liberal" or conservative mood takes hold. But any kind of "assurance" (even in "a current time — frame") to a foreign Government or agency relating to activity in a field that India regards as its sovereign right is bound to be — or deserves to become — controversial. At the very least, the approach in secret exchanges of this kind should be in line with the public posture, if credibility is to be maintained for the policy.

DELAY IN SPARE PARTS FOR TARAPUR PLANT

BK150715 Hong Kong AFP in English 1433 GMT 14 Mar 82

[Text] New Delhi, 14 Mar (AFP)--The Tarapur Atomic Power Plant near Bombay was operating under the required safety regulations despite prolonged delay in supply of certain important spare parts by the United States, it was reported here today.

Press Trust of India (PTI) reports quoted informed sources as saying that India has recently reminded Washington about the supply of spare parts and "favourable action" on the Indian request is expected.

While confirming that there had been enormous delay in the supply of the spare parts, the sources maintained that Tarapur was operating under necessary safety regulations.

According to PTI, the U.S. action in regard to the spare parts was seen here as "yet another experience" in a series of U.S. deferments in supplying certain important items after India's peaceful nuclear experiment in 1974.

Quoting the U.S. Embassy sources here, the agency said that it would have to check up with Washington about the reports that the Reagan administration was denying the spare parts mainly for political reasons. "We have nothing to say now. We will have to find out from Washington," an embassy spokesman was quoted as saying.

The English daily, TIMES OF INDIA, said this morning in a dispatch from Washington that the U.S. State Department and Nuclear Regulatory Commission had been sitting for nearly 18 months on the Indian application for a licence for exports of the spare parts to Tarapur. The American company that built the reactors at Tarapur had warned the State Department that any mishap at the plant would be attributed to India's inability to get American components, the paper report said.

Under an agreement signed in 1963, the United States committed itself to supply fuel and components for the plant for 30 years.

The contract ran smoothly until 1979 when the U.S. nuclear non-proliferation act took effect. It prohibited the supply of nuclear fuel to nations that do not submit to full-scale safeguards.

India maintained that it would allow only Tarapur for international inspection and no other nuclear installations.

It also maintained that the U.S. should implement the 1963 agreement and the non-proliferation act cannot be applied retrospectively to end the agreement.

According to press reports here, the United States, which had not fulfilled its contractual obligations, wants to abrogate the agreement. Talks between the two governments to sort out the issue have failed.

CSO: S100/5630

INDIA

NUCLEAR WASTE DUMPED ON OPEN GROUND

BK090545 Hong Kong AFP in English 0519 GMT 9 Mar 82

[Text] New Delhi, 9 Mar (AFP) -- Radioactive and potentially dangerous nuclear waste materials are regularly dumped on open ground with no fencing or warning near the nuclear fuel complex in Hyderabad, south India, a preliminary investigation showed today.

The investigation followed the deaths of two children at the plant site at the weekend. A girl, 5, and her 3-year-old brother died of severe burns after they touched combustible scrap dumped outside the complex. The children had accompanied their mother to pick up firewood.

The INDIAN EXPRESS newspaper, which broke the news yesterday, today quoted a senior official of the state-run complex as admitting that radioactive zirconium might have got "somehow mixed" with the waste.

On March 24, last year, three boys and a middle-aged woman were burned to death in similar circumstances.

The EXPRESS reporter, who visited the dumping ground on a hillock a few hundred metres (yards) from the plant, found a large patch of burnt-out grass and thorny scrub where the earth looked completely scorched. "A wide area around the patch, strewn with rocks, was filled with mounds of waste materials... several torn surgical rubber gloves, probably used by the workers handling the waste, were also seen," the EXPRESS said.

Investigators found no truth in the claims made by complex officials that the waste, which caused the death of the two children, had been lying there for about a year. The materials did not show any sign of exposure to weather, the newspaper said.

The Hyderabad fuel complex is used for manufacturing nuclear fuel for atomic power plants in India.

CSO: 5100/2111

INDIA PROTESTS IAEA DIRECTOR GENERAL'S REMARKS

Madras THE HINDU in English 25 Feb 82 p 5

[Text]

VIENNA, Feb. 24. (AP) —

The Indian Government has objected strongly to the "unwanted and unfair" remarks about India made by the Director-General of the International Atomic Energy Agency (IAEA) in an interview published in two American newspapers last week.

In a five-point aide memoire handed over to the Director-General by India's Ambassador to Austria yesterday, the Government said the assuming of a partisan attitude by the executive head of an international agency tended to erode the trust the member States put in the high office.

India, as one of the most advanced countries in the use of nuclear energy for peaceful purposes, was deeply pained to note this development and the Government had, therefore, to put on record its regret and disappointment, it said.

The Director-General's statement on U.S. arms supplies to Pakistan was totally uncalled for as it was far outside the purview of his responsibilities. It was an unjustified provocation to the Government and people of India, it said.

Describing the broad thrust of the interview as highly slanted and objectionable, it said the Director-General's statement on unsafeguarded facilities was also outside the purview of his mandate under the IAEA statute.

His remark that India was resisting "reasonable demands" was not pertinent, and no incumbent of the post had ever made such statements before, India said.

The Director-General had, among other things, hailed the U.S. President, Mr. Reagan's decision to arm Pakistan.

CSO: 5100/7057

PLANS, DETAILS FOR FIFTH NUCLEAR PLANT GIVEN

Bombay THE TIMES OF INDIA in English 15 Feb 82 p 13

[Text]

BARODA, February 14 (UNI): Work on India's fifth atomic power station has begun in Moticher, once a tranquil village, now resounding with detonations.

Like the Narora plant, the new Rs. 382.52 crores project is free of any safeguard restrictions since it does not depend on any outside agency for its fuel, heavy water and technology.

A UNI correspondent who visited saw about 20 Adivasis from surrounding villages and two supervisors assisting the lone engineer from the atomic energy department in conducting seismographic tests through detonations, preparatory to civil construction.

The Kakrapar plant would finally comprise four reactors of 235 mw. each. But, for the present, construction of only two reactors was being taken up, an atomic energy department spokesman said.

The CANDU type reactors would be fuelled by natural uranium and moderated by heavy water. They would have the basic standardised features of the Narora reactors, with only slight modifications to suit local conditions, he said.

The fuel for the project would be fabricated at the department's nuclear fuel complex in Hyderabad, now being expanded in a phased manner to cater to Kakrapar and future projects, he said.

READY BY 1991

According to him, the proven reserves of uranium in the country are considered adequate to support a power programme.

The first unit is expected to be ready in about nine years and the second in about ten and a half years, the spokesman said.

Calculated on a conventional basis, the unit energy cost of the project would be about 31.65 paise per kwh, inclusive of escalation and contingencies, the spokesman said.

Cooling towers are being incorporated in the design of the project in view of the requirements of a four-reactor unit station and to reduce the dependence on local water supply.

Environmental protection had been accorded high priority and the project would meet the standard requirements for minimising pollution, he said.

Kakrapar was chosen as the site for the fifth atomic power station by a site selection committee appointed by the department. Formalities like land acquisition have yet to be taken up.

The Gujarat chief minister, Mr. Madhavsingh Solanki, told the state assembly last Monday that no official intimation about the proposed atomic power station at Kakrapar had been received from the Centre. Surat district officials were also not aware of the details.

CSO: 5100/7052

BRIEFS

TARAPUR PACT DISCUSSED--New Delhi, February 13--India's anxiety over the future of the Tarapur nuclear fuel agreement with the U.S. was reflected in the parliamentary consultative committee for scientific departments at its meeting here yesterday. In response to a query by a member, the chairman of the atomic energy commission, Dr Homi Sethna, read out a prepared statement which gave no indication of what the government proposed to do in view of the differences between India and the U.S. over the terms for terminating the agreement for the supply of enriched uranium by the U.S. The routine statement by Dr Sethna did not satisfy the members one of whom commented that much more was expected from Dr Sethna who was a scientist and not a politician. The Prime Minister, Mrs Indira Gandhi, commented to the effect that any one dealing with nuclear energy could not be out of politics. However, Mrs Gandhi herself did not elaborate on the statement and thus there was no indication as to how India would cope with the problem of accumulated spent fuel which it is unable to reprocess without an understanding with the U.S. as per the present agreement. At the earliest consultative committee meeting, Mrs Gandhi had said that the issue would have to be considered in the context of the overall Indo-U.S. relations. There is no move from either side to resume dialogue on this since the last round of talks between India and the U.S. had failed on the terms for the termination of the agreement following the U.S. failure to supply the contracted enriched uranium. [Excerpt] [Bombay THE TIMES OF INDIA in English 14 Feb 82 p 9]

DOUBTS ON TECHNOLOGY--New Delhi, Feb 13--Two scientists of Tata Institute of Fundamental Research, Bombay, have called for an "honest and complete" assessment of the country's nuclear technology, instead of the "cover-up attempts" of incomplete successes, reports PTI. Dr Subir Sarkar and Dr Anwar Jaffri in their paper read out at a seminar on "Nuclear Energy, development and the developing society," said publication of such a report was imperative as the matter was of too much public relevance to be left in the "province" of small groups of scientists and policy makers. Stating that the Atomic Energy Commission has never explicitly demonstrated that nuclear power production in India is economical at a commercial level, they said it was debatable whether clinging to expensive high-technology was necessary for maintaining a profile of progress. [Text] [Calcutta THE SUNDAY STATESMAN in English 14 Feb 82 p 9]

HEAVY WATER PRODUCTION--Petroleum and Chemicals Minister P Shiv Shanker informed the Lok Sabha on Tuesday that efforts had to be made to meet the country's requirements of heavy water for atomic power stations. He said the estimated loss of production on account of a fall in production of heavy water at the Nangal plant of National Fertiliser Limited between September 1981 and January 1982 was 4,528 kg valued about Rs 72.45 lakh. [New Delhi PATRIOT in English 24 Feb 82 p 5]

NEW THORIUM PLANT--Bombay, March 1--The chairman of the atomic energy commission, Dr. N. H. Sethna, today laid the foundation-stone for a thorium plant at Trombay. The Rs. 3-crore plant, with a production capacity of 300 tonnes of thorium nitrate per annum, is based on the technology developed at the Bhabha Atomic Research Centre. The BARC has been running a pilot plant, producing 40 tonnes of thorium nitrate, since 1973. The new plant, being set up by Indian Rare Earths Ltd., a government of India undertaking, will replace the existing plant with a production capacity of a little over 100 tonnes per annum. Earlier, Mr. M. A. Hadi, chairman and managing director of the company, in his welcome address, said the old plant, set up in 1955, was producing thorium nitrate used in the manufacture of gas mantles and thorium oxide used in the nuclear industry. Despite the maintenance problems of the old machines this year the plant would produce about 148 tonnes of thorium nitrate, he said. The new plant, in addition to meeting the needs of about 50 established manufacturers of gas mantles in the country, would help in augmenting the production of the mantles. The spurt in demand for gas mantles in West Asian and Gulf countries could be met by India. [Excerpts] [Bombay THE TIMES OF INDIA in English 2 Mar 82 p 3]

CSO: 5100/7058

PAKISTAN

BRIEFS

FINDINGS OF TEAM REPORTED--A United States congressional staff team says that Pakistan has been pursuing a clandestine program to produce nuclear explosives. The team, which visited Pakistan late last year, examined the question following concern expressed by the Foreign Affairs Committee members of the United States on the issue. According to the United News of India the report says that despite U.S. efforts to slow down the nuclear program of Islamabad by controlling exports of sensitive equipment, the program appears to be continuing unimpeded. The report has suggested that America should seek a pledge from Pakistan to cease all its clandestine activities. [Text]
[BK111024 Delhi Domestic Service in English 0830 GMT 11 Mar 82]

CSO: 5100/5628

BATAAN REACTOR SEEN AS WORLD'S MOST DANGEROUS NUCLEAR PLANT

Kuala Lumpur BUSINESS TIMES in English 17 Feb 82 p 23

[Article by Charles Avila]

[Text]

FOR many members of the World War II generation and present students of that war, "Bataan" signifies more than just another Philippine province. The land is hallowed ground. It was in Bataan, that one of the Western world's most brilliant generals, Douglas MacArthur, suffered the greatest defeat of his military career after almost five months — from December 1941 to April 1942 — of Filipino and American soldiers fighting a gallant but hopeless battle against the conquering Japanese military machine that was sweeping Asia.

It was in one of those desperate battles, that made Bataan so formidable a battleground, that a young Filipino lieutenant capitalised on his decorations to eventually become President of the Philippines.

By a twist of historic irony, Ferdinand Marcos is now very much at the heart of the sad news about recent doings in Bataan. There on the hallowed ground of a peninsula, Marcos has enabled the construction of a Westinghouse nuclear power plant which has been called by an international movement of concerned people "the most dangerous nuclear power plant in the world."

The site of the plant and its 60-ton uranium fuel core lies within 22 miles of three underground earthquake

faults. Its design is ultimately "referenced" to a Puerto Rico reactor which was disallowed by the US Nuclear Regulatory Commission (NRC) due to seismology problems in 1972. The consulting firm, Ebasco Services, which selected the site in the Philippines, found the plant had to be built to withstand seismic shocks of intensity 4.5 on the Richter Scale for shallow earthquakes and 7.5 for deep ones.

Reactor opponents point out, however, that in 1968 an earthquake of intensity 7.4 shook Luzon Island, including the proposed reactor site. Geologists often refer to the area as the "Pacific Ring of Fire," one of planet Earth's most notorious earthquake and volcanic zones. Less than six miles away from the plant site is Mount Natib, an active volcano.

In a July 1978 study, the International Atomic Energy Agency warned of dangers from this volcano's eruption, "for example, ash fall, impact of volcanic ejecta, flowing avalanches, overflowing gas-ash emulsions and gas accumulations," as well as lava mud flows. The study also pointed out that volcano surveillance systems are imperfect and only long advance warning would allow time for shutdown, removal and safe storage of fuel rods.

Imperfect

In October 1979, the then President Carter issued an executive order requiring an environmental assessment of nuclear reactor exports because they "significantly affect the environment of a foreign nation." But nuclear power producers continued spending public money to build nuclear reactors abroad. Over the past two decades, the Export-Import Bank had backed a total of 46 nuclear plants.

The biggest Ex-Im Bank loan and guarantee package — amounting to \$664.6 million — was for the Bataan nuclear reactor.

Under the leadership of the leader of the Philippine nationalist movement, 53-year-old former Senator Lorenzo M. Tanada, the Philippine-based opposition to the Westinghouse project cut across class and ideological lines to become a veritable national movement of protest.

Eleven thousand Filipino farmers were seriously affected by the plant construction, either through eviction from their farms to give way to the mammoth industrial project, or through the massive silt runoff from the plant site that already destroyed rice farms and fishponds where milkfish fingerlings provide an important protein source.

One construction worker, Ernesto Nazareno, criticised the construction of the nuclear reactor, and tried to inform his fellow workers of its implications. He was arrested by the Philippine military, and has not been seen or heard of since June, 1978. His friends and relatives strongly suspect he may have been another victim of the military's practice of "salvaging" (i.e. murder) of political detainees — a practice exposed and strongly denounced by Amnesty International.

Malnutrition

A major study in 1976 by the government-controlled Philippine Power Company, said that from the angle of economic cost-benefit ratios, nuclear energy is the most costly, more than \$1500 per kilowatt. Coal would only have a per-kilowatt cost of \$200; hydro-electric power (in a country that has an abundance of waterfalls) only less than \$1000; and geothermal, which is undergoing rapid advances in the Philippines, \$800.

At the same time, a University of the Philippines study pointed out that the Westinghouse plant represents three times the annual agricultural investment in the Philippines, a nation where 71 per cent of the population is rural. The same study said that 57

per cent of the country's households lack running water, and eight million children suffer from malnutrition, out of a population of 47 million.

The question in the minds of many was, why then did Marcos want this expensive, dangerous project? US Representative, Clarence Long (D-Maryland) said: "The more it costs, the more they want it. Shouldn't a country that faces massive unemployment and food shortages be more concerned with developing its labour-intensive agricultural sector?"

A clue to the answer was provided by critics who pointed out that there are a few scores of millions of dollars in commissions and kick-backs from the power plant project. Herminio Disini, whose wife is cousin and personal physician to Marcos' wife, was hired by Westinghouse as its business agent. In a meteoric rise from obscurity to millionaire status, Disini now heads Herdis Management Corporation, an umbrella for 36 Philippine companies. Bankers' estimates of Disini's profit in the Westinghouse project ran to about \$25 million.

In an effort to neutralise the heavy barrage of criticisms and protests in the Philippines that came from all sectors of society, President Marcos halted construc-

tion on the Philippine reactor for a while. Westinghouse promised to revise the design of the plant which was no different from the Puerto Rico plant disallowed by the NRC in 1972.

The battle shifted to the United States NRC. The movement to stop the Philippine reactor had gained support from many people in the US and around the world. Earl Nicholas Selby, legal council of the Coalition Against Reactor Exports or Coalition CARE, filed a brief with the US NRC to stop the sale of the billion-dollar nuclear to the Philippines.

Controversial

On January 29, 1980, however, the NRC voted 3-3 not to block the sale of the controversial nuclear plant. They decided not to investigate, as the Selby brief had urged them, whether the reactor being built by Westinghouse Corporation posed any danger to the health and safety of the Filipino people and to 23,000 Americans stationed at Clark and Subic military bases less than 20 miles from the plant site. The decision cleared the way for issuing Westinghouse its export licence.

Thus, Bataan was again on its way to putting the Philippines on the map, and achieving for it, in the words of Selby, "the least coveted distinction among nations — being the home of the world's most dangerous power plant."

With the green light for the Westinghouse plant, Marcos assured the Filipino people that safety measures had been added to the nuclear reactor construction that now must go on. To date, however, the government has not produced the specifics to answer the warnings and criticism of scientists and concerned people regarding the risks of the nuclear plant. — Third World Media.

COOPERATION WITH DUBNA NUCLEAR RESEARCH INSTITUTE DESCRIBED

Prague POKROKY MATEMATIKY, FYZIKY A ASTRONOMIE in Czech No 6, 1981 pp 383-304

[Article by Ivan Ulehla, Prague: "Twenty-Five Years of Cooperation Between the Faculty of Mathematical Physics, Charles University, and the Joint Institute of Nuclear Research in Dubna"; presented at international seminar commemorating 25th anniversary of the formation of the Joint Institute of Nuclear Research in Dubna, held 11-13 May 1981 in the Scientists' Club, Slovak Academy of Sciences, Smolenice]

[Text] A quarter of a century is a historical period, so permit me to return to the middle 1950's. It was then, thanks to the peaceful initiative of the Soviet Union, and of progressive scientists in the West, that the idea of using atomic energy for peaceful purposes triumphed internationally. The Soviet Union demonstrated that this was possible in principle by building the first commercial atomic reactor, even though a small, experimental one, in 1954, and by offering to help friendly countries to establish and develop their own nuclear research and to build nuclear power stations. At the same time, the great powers agreed to strip basic nuclear research of secrecy, to hold the first conference on peaceful uses of atomic energy under the auspices of the United Nations, and to create the International Atomic Energy Agency, which was charged with seeing that nuclear research would not be used for warlike purposes.

The events were of great significance for the development of Czech and Slovak nuclear physics. On the basis of a CSSR Government decree, a separate Faculty of Technical and Nuclear Physics was founded at Charles University; all members of the existing Faculty of Mathematical Physics who were theoretically or experimentally involved with nuclear physics, high energy physics or elementary particles joined this faculty. Its first dean was one of the founders of Czech and Slovak nuclear physics, Prof V. Petržilka, DSc, Corresponding Member of the Czechoslovak Academy of Sciences. In addition, in 1955 our government also founded a central Czechoslovak scientific institution, the Institute of Nuclear Research [UJV] in Rez.

But in its efforts to give the greatest possible help in developing nuclear research in friendly countries, the Soviet Union did not stop at this first step. In 1956 it proposed the stimulating idea of founding an international nuclear research center at Dubna, which was received very positively by a number of socialist countries, including Czechoslovakia.

Since the founding of the Joint Institute of Nuclear Research (SUJV) in 1956, the Faculty of Mathematical Physics has had constant, profound friendly contacts with this international scientific center. The noted Czechoslovak theoretical physicist and Charles University professor, Academician V. Votruba, who was another founder of Czechoslovak nuclear physics, became a deputy director in the first SUJV management. He held this important post until 1959, participated in the development of all basic plans for the further development of SUJV, and gave active assistance in creating a comradely international collective at Dubna. I personally had the great honor of being able to begin work in the SUJV Laboratory of Theoretical Physics in 1956.

When I speak of the fact that our faculty and hence Charles University has had close fruitful contacts with this great international center since its founding, I consider it necessary for the sake of clarity to provide some historical detail. The Faculty of Technical and Nuclear Physics, which was founded in Charles University in 1955, was transferred in 1960 to the Czech Institute of Technology (CVUT). When a collective capable of providing instruction in the technical applications of nuclear physics had been built up there, in 1967 the group of theoretical and experimental workers in basic nuclear research returned to Charles University's Faculty of Mathematical Physics so that all physical disciplines would be properly represented at the university. Since the relations of the two faculties are friendly and both of them have been coworkers in nuclear physics research since 1967, I am convinced that we may consider the activity of the above-mentioned collective to have been performed in Charles University as well as in CVUT. It follows that the relations between the university and the Joint Institute were not interrupted in 1960-1967, as might at first appear from the historical documents of SUJV.

Our cooperation with the SUJV developed well, as was the case with other institutes from SUJV member countries. Initially, individuals were sent, and it was only in a subsequent stage that collectives doing systematic work in a specific area were sent to the institute. Thus, those who went to the SUJV in the first stage included not only Academician Votruba, whose scientific work there in 1956-1959 was involved with the physics of elementary particles and particularly their isospin symmetry, and me, who was there until August 1957, but also Docent Suk (1958-1960), who mediated Professor Petržilka's cooperation with the group in the Laboratory of High Energies that was studying nuclear emulsions irradiated with charged pions at 7 GeV; Docents Rob and Korbel (1959-1961), working in Dr Podgoretskiy's group on elastic scattering and multiple-particle production in proton-proton collisions at 9 GeV; and the theoretical physicist, Prof Casmir Muzikar (1960-1962), who worked primarily on problems associated with the study of Cerenkov radiation, under Academician Frank in the Laboratory of Neutron Physics. But in 1960 our participation reached a new level. At that time, Professor Petržilka, a long-term member of the SUJV's institute's scientific faculty, went to the SUJV for a stay of several years. During his stay there, he took over direct management of the first group of Czechoslovak experimenters working in the Laboratory of High Energies and thus laid the foundations for our long-standing successful cooperation with this laboratory. Starting in the early 1960's, the number of our countrymen taking part in the activities of the SUJV increased

rapidly. In 1963, my group joined the Laboratory of Theoretical Physics, working there until 1967 on the multiple-particle problem in the theory of the atomic nucleus--in addition to working in close cooperation with Dr Kazarinov's group in the Laboratory of Nuclear Problems, in which our personnel were also active--on problems associated with phase analysis and inversion problems in the theory of scattering which led to derivation of the nucleon-nucleon potential. Our close colleagues from the Faculty of Nuclear Science and Physical Engineering [FJFI] were working in Dr Kazarinov's group, and even now they are cooperating closely with us in the solution of an extensive research problem which is known by the short designation of SPIN, involving the study of the characteristics of oriented radioactive nuclei by the SPIN method. A new, stronger group led by our colleague Eng Finger, DrSc, was created in the Laboratory of Nuclear Problems to deal with this problem, and it has been active since about the beginning of the 1970's in the laboratory.

Obviously, in addition to those who worked and are now working in our groups, a number of our people also were active as individual members in a wide variety of international groups; there is not time to make detailed mention of their work, which is well known from abstracts and reports. Instead, I would like to concentrate on certain general aspects of cooperation with the SUJV which underline its extraordinary importance for the development of nuclear physics at Charles University.

First is the fact that at the SUJV our people learned a modern style of scientific work, which would be practically impossible without the activity of large scientific collectives concentrating on the investigation and solution of specific problems. In addition to the work of the groups I have mentioned, I should also like to stress in this context the extremely fruitful cooperation in the proton-antiproton experiment conducted under the leadership of Dr Gramenicky using the Lubmila bubble chamber. For a number of years the members of the faculty, together with their colleagues from the Institute of Physics, CSAV, and from the institutes in Kosice, have worked together with Soviet and Dubna collectives of the Laboratory of High Energies processing data from this experiment, and have achieved many valuable, internationally recognized results. Our personnel can now apply the experience which they gained in this manner to their own scientific activity in the faculty, as well as teaching their students modern methods in physics.

Second is the fact that some of our colleagues have taken a part in increasing the international scientific prestige of the SUJV and thus the significance of Czechoslovak nuclear physics as pursued at the university. This has been manifested in specific terms not only by the large number of joint publications, many of which have had considerable international acclaim, and whose number I have just mentioned, but also in the evaluation of their scientific activities through SUJV prizes. Our colleagues in the collectives so honored were given awards in the following cases:

--1965 SUJV prize for work on scattering of pions and protons by hadrons;

--1966 SUJV prize for research on the properties of strongly deformed rare earth nuclei;

--1970 SUJV prize for the study of alpha decay of highly excited atomic nuclei, and SUJV prize for research in the use of Cerenkov radiation in high-energy physics;

--1978 SUJV prize for the SPIN experimental equipment.

Third, and perhaps most important for us, the Joint Institute has enabled us to train a whole new generation of specialists in nuclear and high-energy physics. This can be documented by a number of data:

a. The total time spent at the SUJV by scientists, pedagogues and those active there through their intermediacy who were on long-term assignments of at least a year is 119 years. Since there have been 31 of these persons, the average length of their stay is almost 4 years.

b. These persons have produced 315 publications during their time at Dubna or as a direct result of their stay there; the average is about 10 publications per person and 2.5 publications per year spent at SUJV.

c. Two of the 31 persons have received their Doctor of Science degrees during their stay at the institute or as a result of work done there, and 18 have received the degree of candidate of Sciences. Thus 66 percent of the persons sent their considerably increased their standing. This fact has also had an important influence through the fact that five of these people have become docents and two have become senior leading scientific personnel.

I believe that this figure itself attests to the immense opportunities which the SUJV has offered our university for the training of its scientific personnel.

It is also of interest to consider in which laboratories at the SUJV our personnel have worked during the last 25 years. The distribution is as follows: Laboratory of Theoretical Physics, 12; Laboratory of High Energies, 8; Laboratory of Nuclear Problems, 7; Laboratory of Neutron Physics, 4. This distribution is in accordance with the protocols or agreements concluded regarding cooperation in the previous and current five-year plans. The Nuclear Center of MFF UK [Faculty of Mathematical Physics, Charles University] has concluded an agreement on cooperation with the Laboratory of Theoretical Physics regarding the physics of elementary particles and high-energy physics; jointly with the FZU [Institute of Physics] CSAV it has concluded an agreement with the Laboratory of High Energies on cooperation in proton-antiproton and deuteron-antideuteron problems, in addition to an agreement with the Laboratory of Nuclear Problems on cooperation in the spectroscopic study of atomic nuclei by the SPIN method. All of these joint programs have been effectively carried out in past years, and this performance has had a positive effect toward the proper fulfillment of our tasks in the state plans for scientific research. And here we must note that without the close cooperation with the

SUJV, not only could many of the objectives in the state plan for basic research in our field not have been achieved, but it would even have been rather unrealistic to propose many of them at all.

The data which I have cited only underline what is true of all of Czechoslovak high-energy and low-energy nuclear physics, namely the great service which the SUJV has provided in developing it.

I believe that an important factor which has given great assistance in this good cause has been the profound feeling for international cooperation which we have encountered at Dubna in our Soviet friends and collaborators; among its pioneers and advocates have been the first and second directors of the SUJV, D. I. Blochintsev and N. N. Bogolyubov, and the following directors of individual laboratories: V. I. Veksler, I. V. Chuvilo, A. M. Baldin, V. V. Dzhelepov, I. M. Frank, G. N. Flerov, and M. G. Meshcheryzkov.

During the entire existence of the SUJV, Charles University has emphasized and has had high regard for international cooperation between the two institutions. I believe that in the future, too, we will do everything possible to see that this cooperation is further strengthened.

8480

CSO: 5100/3025

CONCERN OVER NUCLEAR WEAPONS CAPABILITY DISCUSSED

Buenos Aires ENERGEIA in Spanish Feb 82 pp 499-500

[Article by Martin F. Yriart: "The Power of Plutonium"]

[Text] The installation of the Chemical Processes Laboratory (LPQ) at the CNEA [National Atomic Energy Commission] Ezeiza Atomic Center, with basic engineering developed by the CNEA and with detail engineering and construction handled by an Argentine company specializing in large-scale civil and industrial projects, is close to completion.

Also known as a "reprocessing plant", it is a facility designed to develop on a pilot scale the process for treating irradiated fuel from nuclear power-plants, to eliminate the products of fission and to recover the uranium and plutonium remaining in the fuel once it has been removed from the reactor.

Despite the recurring alarm from abroad, emphasizing "secret plants" and atomic bomb projects in Argentina, the existence of the LPQ has been public knowledge since its initiation, and its facilities have been the object of repeated visits by international authorities, and foreign officials and scientists, as well as members of the press. Last November, a team from the BBC in London held a lengthy interview there for British television.

The interest evoked by the LPQ is due to the fact that the reprocessing of the irradiated fuel from nuclear reactors makes it possible to obtain plutonium 239, with which nuclear explosives can be manufactured. But, on a less alarming level and with obvious economic connotations, it also affords the procurement of fuel in virtually infinite amounts for power reactors of both the "conventional" type (PWR, BWR, PHWR) and the "advanced" type (FBR).

In the succinct, objective manner that he usually assumes in making his official announcements, Vice Adm (ret) Dr Carlos Castro Madero, a nuclear physicist and career officer in the Navy, who has headed the CNEA since 1976, reported last December on the progress of the LPQ during his annual press conference. His statements are quoted in their entirety in the heading.

But in personal interviews granted throughout 1981 and in early 1982, Castro Madero expanded upon his views, declaring that the purpose of the LPQ is to develop technologies for peaceful uses with which to manufacture nuclear

fuels using plutonium. The isotopic combination of the plutonium obtained from commercial reactors would make it inapplicable to the manufacture of nuclear explosives. The LPQ will begin operating "cold" (that is, without radioactive materials) in the middle of this year, and "hot" (with irradiated fuel) in 1983.

'No' to Nuclear Explosives

In an interview granted last January to the correspondent from JORNAL DO BRASIL Rosental Calmon Alves, which was reprinted by several international news agencies, Castro Madero reiterated once again that, although Argentina has sufficient scientific and technical development in the nuclear field to construct a nuclear explosive (if it set out to do so), its non-proliferation policy would be opposed to this. On that occasion, Castro Madero gave a reminder that, fortunately, Latin America is a region free from nuclear weapons, and reaffirmed his confidence that it would continue to be such. He also stated that there were no conflicts in the region that would lead to the expedient of nuclear weapons, nor actual possibilities of their use.

Other analysis agree with these claims. As Castro Madero himself has noted, the first country in the region to develop a nuclear weapon would bring about a general race which, within a short period of time, would lead to the reestablishment of the region's military balance. But, in addition, the initiative would put whoever had undertaken it in an international state of isolation; something which, for countries such as Argentina, with nuclear electric development programs under way, would bring about a standstill in the latter.

From a practical standpoint, nuclear arming in Latin America is a "short-sighted" notion. Assuming that one of the nations of the region could develop a nuclear weapon, it would still remain to be seen what means it would have available for directing it against an alleged enemy. None of the nations in the region have strategic bombers or missiles, or rocket-launching submarines. It was already commented some time ago that, "...If we wanted to direct an atomic bomb at a neighboring country, we would have to send it by truck or by rail."

Moreover, few are seriously speculating today with the notion of a "limited nuclear war." From a strategic standpoint, the acquisition of offensive nuclear weapons per se is far removed from affording regional military superiority or even parity (military and political) with the great powers. In a hypothetical world war, every country that had nuclear weapons would also automatically become a target of them.

This means that, to become armed with nuclear weapons requires, at the same time, incorporating an anti-nuclear defense system (Norad, AWACs, ABMs, etc.) something which is certainly even far more remote for a country such as Argentina than a nuclear explosive. Therefore, developing nuclear weapons under those circumstances would mean bringing upon ourselves two possible situations:

Loss of credibility, because in this instance the nuclear weapons would be merely symbolic, or "rhetorical"; they would not intimidate anyone, nor even have a deterrent power.

Premeditated suicide, because any attempt to use them would cause reprisals from either of the two superpowers and, in the event of a worldwide military conflict, would provoke a "preventive" attack.

Although all these arguments are universally known, the specter of the nuclear arms race in Latin America has been raised, first to interfere with the independent nuclear development programs of Argentina and Brazil, and now, with the scare of war with Chile (which neither Argentines nor Chileans want), to influence the Argentine reprocessing program.

The article from NEW SCIENTIST quoted in the heading fleetingly revived the specter of "the Argentine atomic bomb." This respected British magazine devoted to scientific and technical development came as a shock with the countless errors in information about the actual Argentine situation and the PNA [Argentine Nuclear Plan], in its article of last December, signed by Ziauddin Sardar, who quotes "sources" in the United States and Mexico, but not Argentina.

At the present time, the reprocessing of irradiated fuel is a fact in the industrialized countries, whether for military or civilian purposes. After the Reagan government's decision to permit commercial reprocessing, only Japan refrained from carrying out a program in that area, although it has assistance from Great Britain for recovering U-235 from its burned fuel. The enriched uranium cycle makes reprocessing inevitable to achieve suitable economic efficiency. During the present decade, the FBR ("fast breeders") will go into commercial operation, thus creating a demand for plutonium and a market for this fissionable material. Finally, the need for finding an end destination for the highly radioactive waste from the fuel cycle (a problem still unsolved in virtually the entire world) will also make reprocessing necessary.

In public statements made during recent months, Castro Madero has indicated the reasons for Argentina's attempt to attain a mastery of the reprocessing technology. They are fundamentally three:

Increase in nuclear electric reserves. The incorporation of plutonium into the fuel of the Argentine natural uranium/heavy water reactors would make it possible to save up to 50 percent of the uranium being used currently; which would mean automatically doubling the energy value of the national uranium reserves.

Possibilities of exporting energy. For reasons of scale, and the acquisition and amortization of technology and infrastructure, Argentina is further removed than the industrialized countries from making use of the "fast breeder". But that does not preclude its participating as an exporter of plutonium on the world market, something which is opening up in the current decade.

Possibilities of exporting technology. Argentina aspires to be an exporter of nuclear technology. No country can do this on an equal footing with those operating on the world market unless it is in a position to offer the entire fuel cycle, and this includes the reprocessing. Otherwise, there will always be someone who can offer "something more" or who will use the difference as a "catch": either all or nothing.

The back-end of the fuel cycle has three fundamental technological components: the reprocessing, the manufacture of fuels with plutonium and the disposal of the final waste from the cycle. The American and European nuclear industry has been accused of irresponsibility for not having properly anticipated the consequences (regarded by some as apocalyptic) of the effect of the waste from the cycle on the environment. It unfairly bears in this a blame that is to a great extent attributable to the military industry.

Although many countries have engaged in research on the different aspects and types of technology for the disposal of nuclear waste, Argentina will probably be one of the first to adopt a definitive solution for its own. This will come as a result of an agreement between the CNEA and the University of San Juan, which will carry out feasibility studies on the installation of a storage place for radioactive waste in a stratum of granite located in Chubut Province.

Moreover, Argentina has already begun the development of the technology for incorporating plutonium into fuel elements of natural uranium/heavy water nuclear powerplants, which has now been specifically planned for Atucha II.

The mastery of the three types of technology (reprocessing, re-use and disposal) constitutes an essential goal for Argentine nuclear development, with a view toward the efficient use of the country's uranium-bearing resources and of its technological potential on the world market. The formulation of goals and programs in this area, implicit in the plans currently in effect, warrants the expectation that, in the not too distant future, a new portion of the Argentine Nuclear Plan will be devised, which will supplement the present one in these advanced fields, and will extend its effectiveness beyond the last decade of this century, the borderline of the current objectives.

2909

CSO: 5100/2110

CNEA CHAIRMAN ON NUCLEAR WASTE DUMPING

PY180108 Buenos Aires NOTICIAS ARGENTINAS in Spanish 1230 GMT 16 Mar 82

[Excerpts] Buenos Aires, 16 Mar (NA)--Rear Adm Carlos Castro Madero, chairman of the National Atomic Energy Commission (CNEA), has denied that Argentina has received proposals from other countries to store radioactive wastes.

Asked by NOTICIAS ARGENTINAS (NA) if the final dumping of nuclear waste had been discussed at the meeting held in Tokyo last week, Castro Madero replied that the problem had in fact been discussed but no reference had been made to it being dumped in Argentina. The meeting was attended by officials from Japan, the United States, the USSR, Great Britain and France.

Regarding the dumping of Argentine nuclear waste, Castro Madero asserted that there is a project well underway to dump it in the Gastre area in Chubut. Castro Madero said: "An overall study has already been made of the most adequate places where nuclear wastes might be dumped and about 200 favorable places have been found." He added: "Following a more extensive study made by the CNEA and San Juan University, we decided on the place in Gastre."

Castro Madero said: "We have already talked with the government of Chubut and the land has been awarded to us to carry out the final studies. Drilling will be started in Gastre to find out if the area is geologically suitable for nuclear waste deposit."

Regarding the discussion on the final dumping of nuclear waste at the meeting held in Tokyo last week, Castro Madero said that on outlining "Argentine nuclear strategy, I reviewed the objectives that are being pursued, the way in which Argentina will deal with each stage of the nuclear waste process and, above all, the studies it has made on preserving the environment."

Answering another question as to whether the above-mentioned countries had shown interest in dumping their nuclear waste in our country, namely in Chubut, Castro Madero replied: "No, no, no, no. That subject was neither discussed nor suggested. Each country is studying its own way and according to its own capabilities how to dump their nuclear waste. The work that will be carried out in Gastre will be exclusively for Argentine nuclear waste."

Regarding whether Argentina has received offers from other countries for dumping their nuclear waste here, Castro Madero replied: "Argentina has received no offers."

REPORTAGE ON ANGRA-I ENTRY INTO OPERATION

Preheating System Problem

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 10 Mar 82 p 26

[Text] Rio--The executive director of the National Nuclear Energy Commission (CNEN), Rex Nazare Alves, announced in Rio yesterday that the Angra-I nuclear reactor will go into operation today, with the successive stages that will culminate in the fission of the nucleus of the power plant, even with the defects that developed in the preheating system of the steam generator.

In the opinion of the CNEN, there is no danger that would threaten the population or even the safety of the reactor equipment, therefore, there is no reason to delay the criticality test, when the performance of the reactor with the nucleus in fission will be examined. However, it cannot exceed a power of 30 percent until Westinghouse decides what to do about that problem, which has developed in other reactors of the same construction line as Angra: such as that of Ringhals, in Sweden; Alamaraz, in Spain; McGuire, in the United States; and Krisko, in Yugoslavia.

The directors of Furnas and the CNEN attended discussions at the Brazilian Academy of Sciences to respond to questions presented by the Brazilian Society for the Advancement of Science and the Brazilian Physics Society (SBF). The president of the SBF, Moyses Nussenzveigt, considered the meeting "historic," since for the first time government experts responded to the doubts of the scientific community. The CNEN executive director, Prof Rex Nazare Alves, pointed out that the members of the scientific community are, like himself, professors and paid by the government, and asked: "What if tomorrow something were asked of you gentlemen that violated your consciences? All that to guarantee that the go-ahead for the reactor will be given by the CNEN without pressures of a political nature."

Representing the scientific community, Moyses Nussenzveigt expressed serious concerns regarding the entry of operation of the Angra-I reactor, alleging that there were surpluses of energy in the system and, therefore, the entry into operation of a defective reactor was not justified simply to justify the nuclear program. Another aspect taken up was the secret nature of all the nuclear decisions. The CNEN executive director promised to open up the information to the press and to schedule other meetings with the scientific community, the next one being to discuss the problem of atomic waste.

In the presentation of the Furnas experts and directors, it became clear that because of a "marketing" problem, to win out in the competition to install reactors, Westinghouse decided to install a preheater in the steam generation system. That preheater improves the thermic yield of the generator by 10 percent and the overall yield of the reactor by 3 percent.

However, that preheater cannot handle the turbulence caused by the waters that enter the steam generator at great velocity and high temperatures. Consequently, in Ringhals and Almaraz--reactors identical to that of Angra-I--the turbulence caused cracks in the pipe plates of the steam-generating system. The greater the power at which the reactor is operating, the greater the danger because the turbulence increases and, thus, the vibration, which ends up breaking the plates.

Vibration

The director of Furnas, Sergio Motta, justified the entry into operation because the problem of resonance and vibration occurs only when a certain level of power is reached by the reactor. Operating at 30 percent, there will not be any problems for Furnas. The director of operations of Furnas, Luiz Carlos Barreto, declared that the system has a great deal of installed power but does not have firm energy and that the Angra-I plant is necessary--and in fact is delayed--to provide reliability to the system and to operate as a basic plant. He pointed out that the other basic plant, the Santa Cruz thermoelectric plant, had been deactivated to save oil.

The CNEN executive director declared that the committee of experts from the International Atomic Energy Agency (IAEA), which came recently to analyze the situation of Angra-I, approved the entry into operation of that plant, provided that it did not exceed 30 percent of its power and that the water of the system that feeds the primary circuit enter the steam generator through the upper opening, avoiding the lower opening, in which the water goes through the preheater. For that reason, Nazare Alves guaranteed that there is complete safety for the criticality tests and there is no restrictive factor.

The Furnas experts guaranteed that Westinghouse is going to change the defective system or the necessary parts, according to the decisions of that company, which is analyzing the problem of Angra-I, together with those of the Ringhals, Almaraz, McGuire and Krisko reactors. They also revealed that Westinghouse is not responsible for the loss of revenue resulting from the delay in the entry into operation and that there is no insurance for that type of loss. All that Westinghouse guarantees is exchange of the defective equipment of the system.

Effect on Energy Rates

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 11 Mar 82 p 34

[Text] Rio--The president of Furnas, Licinio Seabra, declared in Rio yesterday that there is great interest in having the energy from Angra-I enter the energy system as quickly as possible without representing a sacrifice of

safety or imposing risks on the population. For that purpose, Furnas is going to use the procedures of contractual pressures to get Westinghouse to resolve the preheater problem in the shortest possible time.

According to Licinio Seabra, the entry of the energy from Angra into the system is not going to represent anything to the consumer's pocketbook this year, and in 1983 there will be an increase of only 1.5 to 2 percent of the overall increase of rates represented by nuclear energy. He explained that that small increase is due to the fact that the energy of Angra (600 megawatts) represents less than 10 percent of the Furnas system or 7,000 megawatts. Although that energy is expensive, on the basis of \$2,000 per kilowatt-hour compared to \$400 per kilowatt generated by the Furnas hydroelectric plants, whose costs have already been depreciated, the government has also placed funds in a contingency fund to attenuate the impact of the costs, the president of Furnas acknowledged.

Seabra declared that the increase of energy rates for the current year should be equal to inflation plus a real increase of 3 percent. Since the anticipated inflation in the Furnas budget is 80 percent, an 83-percent increase is expected in the rates for the consumer this year.

According to Licinio Seabra, the overall cost of Angra-I up to this time is \$1.3 billion. Furnas pays 10 percent of the interest per year on the total financing granted by the Eximbank and a pool of U.S. banks. Since the defect in the preheater of Westinghouse's steam generating system has already caused a 6-month delay in the entry into commercial operation of the plant, it can be estimated that up to now, Furnas has suffered a loss of \$65 million (5 percent of \$1.3 billion) from the defect--which cannot be indemnified inasmuch as there is no clause for indemnification of lost revenues. That estimate was also acknowledged by Seabra.

Repair

The president of Furnas believes that Westinghouse is going to repair the preheater by the end of the year. He said that that repair may entail a further loss to Furnas but he could not estimate how much the company will lose. He stressed that Westinghouse does not plan to displace the team generator or even remove the heater. It merely wants to change the systems of plates that enclose the pipes and some parts of the preheater.

He pointed out that Furnas became a member of the "club of owners" of reactors purchased from Westinghouse with defects in the preheater of the steam generator and that all the countries involved (Sweden, Spain, Yugoslavia) are following with interest the solutions that are being sought by the suppliers.

He stressed that thus far Furnas cannot complain about Westinghouse's behavior but that if it becomes necessary, there are contractual clauses that protect the rights of the company. Furnas is protected vis-a-vis Westinghouse by a 1-year guarantee after the entry of the reactor in commercial operation. He stated, further, that the Ringhals nuclear plant in Sweden was already out of guarantee; nevertheless, Westinghouse is making every effort to repair the defect.

Fission Imminent

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 11 Mar 82 p 34

[Text] Rio--Brazil is entering the era of nuclear energy with the beginning of the criticality tests after an 11-year wait for the construction of the Angra-I nuclear plant in the Almirante Alvaro Alberto Power Station, where two other nuclear units are being built. As a matter of fact, fission has not occurred yet but that should take place by Sunday at the latest, according to the president of Furnas, Licio Seabra.

According to Seabra, "the water bag has broken, but we cannot say exactly when the birth will occur." The reason for this is that this is the first time a nuclear plant has been put into operation in Brazil and all the tests have to pass through the control of the CNEN and Westinghouse experts and cannot follow a rigid timetable.

According to Seabra, the press can be certain that it will be advised of the beginning of fission by the end of the week, with the reactor operating at 5 percent of nominal power until it reaches 30 percent within the next 30 to 45 days.

All atoms are composed of negatively charged particles called electrons and the nucleus is composed of positive particles called protons. The repelling electrical force between the positively charged particles of the nucleus tend to separate them from one another but there is a much greater binding force between those particles that keeps them very close, which makes the nucleus immensely compact in relation to the total volume of the atom. Nuclear power is nothing more than the result of the fission of that nucleus into two or more smaller nuclei with a total binding energy smaller than the original nucleus.

Some heavy isotopes, such as Uranium-235, have the property of being fissionable when they interact with a neutron. Out of that fission comes two or more smaller nuclei and about two or three new neutrons, which can be absorbed by other elements existing in the [nuclear] environment or cause further fissions, forming a controlled chain reaction.

Control of nuclear reactors consists essentially in modifying the quantity of neutron-absorbing elements in the reactor, as desired: if the quantity of neutrons produced is smaller than the quantity absorbed (plus the escapes out of the reactor), it is said that the reactor is subcritical; if it is equal to the quantity absorbed (plus the escapes), it is said that the reactor is critical, or that criticality has been achieved. In that case, the nuclear fission is self-sustaining.

After criticality is achieved, if the quantity of neutron-absorbing elements is reduced slightly, it goes into a situation of supercriticality, in which the number of neutrons produced per unit of time is greater than the number of neutrons that disappear. In that case, the rate of fission becomes ever greater, increasing the nuclear energy generated per unit of time, that is,

nuclear power. Once the nuclear power desired is achieved, criticality is restored and, consequently, the reactor remains stable at the new power level.

The Tests

According to the president of Furnas, all the equipment of Angra-I was tested cold and hot and the reactor was charged with the nuclear fuel last September but the quantity of neutron-absorbing materials has been kept high enough to keep the reactor in the subcritical phase. The materials used to absorb the neutrons are bars of silver-indium-cadmium alloy and soluble boron in the cooling water. To heat the unit in the hot tests, external electrical power was used to activate the main cooling pumps.

At the present time, what is being done in Angra-I is the criticality phase to obtain fission in a self-sustaining chain. In order to do this, the neutron-absorbing control bars will be removed and the soluble boron diluted in a rigidly controlled manner. After that stage, a sequence of tests and measurements (about 300) will be begun for the purpose of checking the hypotheses and predictions of the nuclear design of the unit in the critical condition, but with power almost nil. The main tests are: critical concentrations of soluble boron for various positions of the control bars; the ability to return to the subcritical condition; the density of power and temperature at various positions of the reactor; etc.

If the tests indicate any abnormality that can endanger the reactor or the environment, it will be turned off (again increasing the quantity of neutron-absorbing materials) and kept that way until the problem is solved. All of the plant's safety and control systems will be checked and all the criteria measured at the different power levels. Moving up from one level to another will occur only if the results of the tests are acceptable, explained Licinio Seabra.

Tests Proceeding Normally

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 12 Mar 82 p 30

[Text] Rio--The tests for the entry into operation of the Angra-I reactor proceeded yesterday without any irregularity, according to the concessionaire company, Furnas. Unlike its earlier procedure, it refused to give further details, promising only to advise the press when the nuclear fission process occurs.

For nuclear scientists, the great problem that arises with nuclear fission will be determining where to store the atomic waste. The National Nuclear Energy Commission (CNEN) has not yet determined the site of the atomic waste and provisionally all radioactive material will be stored in storehouses near the reactor building itself.

Radioactive Waste

Radioactive wastes are classified as of low, medium and high radioactivity. All material that enters the plant, from cigarette butts, pencils, toilet

paper, to the special clothing (which after a certain length of time has to be discarded because of the level of contamination reached) make up the low-intensity radioactive waste.

Although they are of low intensity, those wastes end up forming large volumes of material that have to be packed in steel barrels with tar and then encased in large blocks of cement which must be left at special sites until the decline of radioactivity.

8711

CSO: 5100/2114

PRODUCTION OF POCOS DE CALDAS INDUSTRIAL COMPLEX DISCUSSED

Sao Paulo VISA0 in Portuguese 22 Feb 82 pp 58-59

[Excerpts] The Pocos de Caldas plateau industrial complex of the Brazilian Nuclear Corporation (NUCLEBRAS), consisting of the uranium mine, the plant for the production of concentrate, the sulfuric acid factory and auxiliary facilities, will be inaugurated this quarter. The mine is already in operation, and in preoperation tests in the plant, an experimental production of 200 kilograms of yellow-cake (uranium concentrate) was obtained from uranium ore extracted from the Osamu Utsumi mine in Caldas.

Direct investment in the Pocos de Caldas plateau industrial complex has already reached \$230 million. Ninety percent of all the equipment was supplied by national industry; the other 10 percent is some very special equipment and instrumentation not yet manufactured in this county.

The basic project of the plant was carried out by the French group Societe du Cycle de l'Uranium Pechiney Ugine Kuhlman and developed on the basis of a uranium recovery process obtained by NUCLEBRAS technicians in the area of mineral engineering. With regard to the participation of Brazilian companies in the project, the Andrade Gutierrez Construction Company did the stripping and premining of the deposit; Natron, the detailed engineering plans for the plant; Paulo Abib, the detailed engineering plans for the mine; Tenenge did the installation; and the Logos-Engerio consortium helped manage the undertaking. Natron, with its own technology, planned the sulfuric acid factory--sulfuric acid is the raw material used to solubilize the uranium ore.

Production: The concentrate plant will produce commercial yellow-cake in the form of ammonium diuranate (it has a capacity of 500 tons per year). As by-products, in a first phase, it will produce concentrates of molybdenum in the form of calcium molybdate, and in a later phase, zirconium, in the form of oxide.

The ammonium diuranate (a yellow powder) is a uranium concentrate from which fuel is produced for nuclear reactors. To obtain the yellow-cake, the uranium ore is crushed, ground and dissolved in sulfuric acid. This forms a paste which by means of chemical reagents precipitates the uranium combined with ammonium, thus obtaining the ammonium diuranate.

According to NUCLEBRAS estimates, considering the current quotation for uranium, the Pocos de Caldas plateau industrial complex will produce revenues of \$1.1 billion during its useful life, without taking into account the value of zirconium and molybdenum as byproducts.

Reserves: The geological reserves of uranium in the plateau are currently 26,800 tons, 20,000 tons of which are measured and indicated and 6,800 inferred.

Currently, Brazil's total uranium reserves are 236,300 tons, the fifth in the world, exceeded only by the United States, Canada, Australia, and South Africa. The largest Brazilian deposit is that of Itataia, Ceara, with 122,500 tons; the second is Lagoa Real, Bahia, with 48,000 tons; the third is the Pocos de Calcas plateau, with 26,800 tons. The others are in the Iron-Bearing Quadrilateral, Minas Gerais, with 15,000 tons; Espinharas in Paraiba, with 10,000 tons; Figueria in Parana, with 8,000 tons; Amorinopolis in Goias, with 5,000 tons; and Campos Belos-Rio Preto in Goias, with 1,000 tons.

8711

CSO: 5100/2114

BRIEFS

POWER GENERATING PLANTS--It has been disclosed that the schedule for beginning operations of Angra II and III nuclear plants has been delayed by 1 year. This is part of plan No 2,000 of the Brazilian Electric Power Companies, Inc (Eletrobras), which was approved and submitted to President Figueiredo by Mines and Energy Minister Cesar Cals. The schedules of other projects have been reviewed in addition to those of Angra II and III. This review includes the Itaipu Dam which in 1982 will only begin to operate 3 units instead of 4 as was scheduled. Regarding the number of nuclear plants which will be operating by the year 2000, it was stated that there will be eight. This information had already been disclosed by Eletrobras President General Costa Cavalcanti. These decisions were made due to the fact that electric energy consumption, which should have increased by 11.8 percent, did not even reach a 3.2 percent increase in 1981. According to the government, an increase of 10 percent per year of electric energy consumption will take place only in 1990. [Excerpt] [PY041429 Sao Paulo Radio Bandeirantes Network in Portuguese 1000 GMT 4 Mar 82]

CSO: 5100/2113

BRIEFS

TRANSPORTATION OF IRRADIATED FUEL--Some irradiated fuel elements might be transported through urban areas from Koeberg nuclear power station near Cape Town, the Minister of Mineral and Energy Affairs, Mr F W De Klerk, said. Replying in writing to a question by Mr John Malcomess (PFP Port Elizabeth Central), Mr De Klerk said the elements might, from time to time, be transported to Pelindaba, but the route had not yet been selected. "Such movements will take place only with the full approval of the atomic energy board and in accordance with international atomic energy agency rules for the packing and transportation of such materials." He said radio isotopes for use in medicine, agriculture and industry, packed according to international standards, had been transported through urban and other areas for more than 20 years. "Spent fuel elements from Pelindaba have also been sent to South African ports for many years. The consignments comply with international safety regulations governing the packaging and transport thereof." In reply to another question by Mr Malcomess, Mr De Klerk said no spent nuclear fuel from Koeberg or any other source was to be reprocessed in South Africa within the next five years. [Text] [Johannesburg THE CITIZEN in English 13 Mar 82 p 4]

URANIUM MINE OPENED--Beisa Mines, a new mine in the Gencor group and the first primary uranium mine with gold as a by-product, was officially opened yesterday. In the OFS, 25 km south of Welkom, Beisa is the fourth mine in the province to be managed by Gencor. Total cost of the mine will be about R220-million.--Sapa. [Text] [Johannesburg THE CITIZEN in English 6 Mar 82 p 17]

CSO: 5100/5627

FEDERAL REPUBLIC OF GERMANY

CONSTRUCTION OF WASTE STORAGE FACILITY IN GORLEBEN APPROVED

Interim Storage

Hamburg DER SPIEGEL in German 11 Jan 82 pp 34-36

[Text] The preliminary work on the construction of an interim storage facility in Gorleben for spent fuel rods from nuclear power plants can begin soon, but the final disposal of the radioactive waste is still an uncertainty. Whereas the heaps of nuclear-fuel waste are growing at the power plants, political figures and the industry are playing for time by way of chancy temporary solutions.

At the start of the year, the German Company for Nuclear Fuel Reprocessing (DWK) had a special reason for rejoicing. "We were enormously pleased with the decision," admitted a spokesman for this outfit.

This fine kettle of fish was procured for the above "private corporation" by the Seventh Senat of the Lüneburg Higher Administrative Court (OVG), which for the first time brushed aside the legal obstacle raised by citizens opposed to the construction of an interim storage facility in Lower Saxony's Gorleben for spent fuel assemblies from nuclear power plants.

As early as at the end of this month--assuming that by then the OVG decision including the relevant substantiation is available in written form--the DWK can begin clearing trees at the construction site, and after that the site fence for the projected storage facility is to be erected in a stormproof manner. A DWK spokesman says that "we have come a bit nearer again to the goal of nuclear-waste disposal."

The ruling by the chief justices from Lüneburg and the scheduled activity of the DWK in the forest near Gorleben mark the most recent attempt by the State and industry to get rid of nuclear wastes, or anyway to at least clear them away for decades. Time is pressing, and the radioactive waste is piling up.

At present, 55,800 drums containing weakly radioactive material as well as 1,500 drums with moderately active wastes are being stored at nuclear power plants, central depots of the Laender, and at large research centers, it was announced by the Federal Government last week.

In the FRG another 13,000 cubic meters of weakly active wastes alone are generated each year--more than what can be contained in 2,000 Volkswagen vans crammed

completely full. Some 80 percent of this is produced by nuclear engineering and nuclear research facilities, which for the present are letting this waste pile up on the premises of their buildings.

Hardly less precarious is the waste-disposal situation in connection with the highly radioactive materials which are being generated just in nuclear power plants. At the 14 West German reactors, which produce annually not only about 9,000 megawatts of power but also 300 tons of spent fuel assemblies, there is not enough room for this dangerous waste.

The situation becomes more critical with each new power plant. By the year 2000, according to the calculations of DWK head Guenther Scheuten, in West Germany alone about 14,000 tons of radioactive uranium from reactors will "be located at the nuclear power plants themselves and at external storage facilities," and this does not include those fuel assemblies which are to be reprocessed in German and foreign plants. Each year after that, according to Scheuten, "an additional quantity of about 1,100 tons of uranium within spent fuel assemblies will be added to this."

To be sure, as the Federal Government has just announced once again, it considers the disposal of the waste to be safeguarded at least up to 1990. But the "waste disposal certification" provided by law for the construction and operation of a nuclear power plant is tantamount already to a promissory note drawn on the future, and the coverage of this note is uncertain. According to Harald B. Schaefer, SPD Bundestag deputy and chairman of the Bonn Inquiry Commission on "Future Nuclear Energy Policy," since the "disposal of radioactive waste is being realized practically nowhere, not even in the FRG," this means that the "construction of new nuclear power plants is not justifiable on waste-disposal grounds at the present time."

On the one hand what is lacking is an ultimate storage facility where the waste--which depending on the particular type is active for hundreds or else hundreds of thousands of years--can be securely sealed until it has become safe for human and other life. This would be, for example, in depths which are supposedly inactive geologically, such as in the salt dome located 1,000 meters below Gorleben.

On the other hand, what is also lacking is a facility for the reprocessing of used fuel assemblies, where uranium and plutonium are recovered as reactor fuels and only the radioactive residual substances which have been separated out are destined for the ultimate storage facility.

But both methods mean for the Germans scarcely more than a spirit of hope. Individual steps in that direction are barred to them, at least for the time being:

At France's La Hague, where most of the fuel assemblies are to be reprocessed from German nuclear power plants, there have been technical hitches again and again, and last autumn there was even a halt to receiving material at one point, following political dissension. Moreover, the contracts expire in 1985.

At Britain's Windscale, where the DWK wants to have its fuel rods processed, the facility has been shut down for years now. In the United States, where the DWK would prefer to commit itself in the nuclear recycling business, no commercial reprocessing is going on at all, following some serious accidents.

The gigantic national waste-disposal center inclusive of reprocessing facilities once planned by Bonn and the DWK for the Gorleben location miscarried because of the opposition of the Lower Saxony Land Government, which considered the project to be "politically not acceptable." Whether or not the salt dome near Gorleben is suitable as an ultimate storage facility cannot be determined for at least another 10 years.

As for one of two possible reprocessing sites in the Hessian Hills and another one in the Bavarian rural kreis of Schwandorf, publicized in December, the DWK itself has not yet made the final choice. The requisite planning and licensing procedures cannot be initiated until this is done.

It is by no means certain whether reprocessing brings any advantage at all. It makes sense only if nuclear power plants of the fast-breeder type are also in operation, since these are able to burn the highly poisonous plutonium which has been recovered. But a construction stop is threatening the prototype of the German fast breeder in Kalkar because of a lack of funds.

The upshot of all this: What could be considered as waste disposal exists on paper only, and what is being passed off as waste disposal is not this. If the Atomic Energy Law were understood in the sense that it was intended, surely no nuclear power plant would be allowed to operate any longer in the FRG.

Along with industry, the leaders of the Federal Government and Laender did not want to be as strict as all this in this "precarious waste-disposal situation" (SPD deputy Schaefer). They agreed among themselves that for the licensing of reactors it would be acceptable as a "waste-disposal certification" if the power plant operators make it clear where they intend to safely keep the spent fuel elements for the first 6 years of operation.

Since even that is not exactly easy, the industry hit upon another way out which is not at all provided for in the Atomic Energy Law: Interim storage of the fuel rods, for decades if necessary.

Two variants of this interim solution, which have nothing to do with waste disposal, are now being pushed forward at the same time--the so-called compact storage of spent rods at the nuclear power plant itself, and their keeping at off-site interim storage facilities, as is planned now in Gorleben. Both methods involve additional risks.

In compact storage--which has been approved or applied for already in conjunction with almost all the nuclear power plants--the fuel assemblies, depleted of fuel after 3 years of use in the power plant, are stored closely packed in so-called spent fuel pits of the reactor. This waste has so much radioactivity that it can be transported into the pit only by means of total shielding, by remote control and under water--as is the case, for example, at the Bavarian power plant Isar I in Ohu.

It takes one half to one year for at least the short-lived radioactive fission products to have decayed so as to no longer radiate--a necessary condition which must be satisfied before the fuel assemblies with their long-lived radioactive

substances can be carried away from the power plant at all, in thick-walled containers encased with steel and lead.

Almost always these spent fuel pits are designed to have a capacity of two "aggregate amounts unloaded per year" plus all of the fuel rods contained in the reactor, for which room must be found as well in an emergency--and this totals another 3 per-year aggregate amounts unloaded. The ploy of the operators: The unloaded fuel assemblies are simply packed closer together, with the spent fuel pits being converted into interim storage areas.

However, this trick of packing in such compact storage areas is encountering judicial opposition. Last September, the Darmstadt administrative court invalidated the permits for compact storage areas for the Biblis A and B reactors, because not only was it not proper to the operation of a nuclear power plant "to store spent fuel assemblies beyond the decay period....," but also there was nothing in the Atomic Energy Law which allowed waste disposal to "take place somehow or other inside the power plant."

If the Darmstadt judgment becomes final and for the present other courts interpret the Atomic Energy Law more liberally, simply for that reason alone power plants would probably soon have to be shut down. Moreover, in the opinion of many scientists compact storage areas are unacceptable from a technical viewpoint as well.

If the cooling system fails because of malfunctions in the reactor or because of external effects such as earthquakes or terrorist attacks, the dramatic consequence would be a no longer controllable heating of the fuel rods, their melting down, and the release of "relatively large amounts of hydrogen with a resulting explosion," as the nuclear physicist Helmut Hirsch reported.

Also the other patent remedy, to keep the fuel rods for decades in off-site interim storage facilities, seems questionable to many experts. In both Gorleben and Ahaus of North Rhine-Westphalia, 1,500 tons of uranium are to be dumped in each case--to remain in these places until they can be reprocessed or put in ultimate storage someday.

The spent fuel rods, which have a temperature of 400 degrees Celsius, are to be lodged all this time in thick-walled transport casks, which are called "Castors" after the horse-tamer of Greek mythology.

But this myth of the casks does not amount to much. Scientists such as nuclear physicist Hirsch are not alone in saying that this "new miracle weapon" has been conceived "in haste," shows "a lack of mature reflection," and signifies "a dramatic departure from the previous philosophy of safety."

Even the DWK, which recently has been promoting the planned uranium center as "a type of interim storage which is especially compatible with the environment," had admitted before it had gone so far with its plans that "up to now no experiences with dry storage" in transport casks were available in the FRG, and that this storage "has not yet reached the same level of development and experience" as interim storage under water.

In fact, just in 1978 the now favored storage system was "considered to be unrealizable" by the Reactor Safety Commission, and the nuclear power industry itself styled "this method" as "not yet demonstrated to be feasible" at that time. A DWK employee in 1978: "It is not possible to have an adequate protection against effects from the outside."

But in connection with the interim storage facility at Gorleben with as much as 1,500 tons of highly radioactive material, the DWK considered a simple construction permit to be completely adequate--as if only a summerhouse were in question--and the planning authorities in the responsible rural kreis of Luechow-Dannenberg shared this assessment.

After an agreement had first been reached between the greater township of Gartow, to which Gorleben belongs, and the DWK about its "locating there," and after the DWK had declared itself to be willing to fork out several million marks to the township and the rural kreis, the erection of a "property enclosure" was supposed to have commenced by now.

At first the second division of the State administrative court in Lueneburg stopped the project on petition of six residents of Luechow-Dannenberg, chiefly because "safety aspects specifically related to the nuclear-power legislation... do not seem to have been considered to the appropriate degree" in the construction plans.

Even the construction of the property enclosure--1,400 meters long, up to 5 meters high, and topped by "barbed-wire placements"--means that already a "step which creates a fait accompli has been taken in the direction of a storage facility... of significance to nuclear power law," with such a facility involving "a considerable potential risk."

The judges asserted to the authorities and the DWK that they had "chosen a way of proceeding" which in the judges' opinion "was organized largely in such a manner that the intended project could be executed with as little trouble as possible and the citizen would merely be able to take cognizance of the accomplished facts."

Now the quashing of this "scandalous judgment"--in the words of a DWK spokesman--by the higher administrative court is being welcomed "enormously" by the reproprocessors. On the other side, the judgment has given rise to amazement above all.

The Berlin lawyer Reiner Geulen, who is representing the Gorleben plaintiffs, sees in these construction-permit proceedings for the interim storage facility numerous violations of the Basic Law and the Atomic Energy Law. And now he wants to have a hearing on these questions at the highest appellate level--a complaint of unconstitutionality lodged with the Federal Constitutional Court.

Opposition in Gorleben

Hamburg DER SPIEGEL in German 11 Jan 82 pp 36-38, 40-41

[Text] "Progress," said municipal councilman Harry Wilkens from Gorleben, "must not be obstructed. We're going to create something lasting for our young people, whose only legacy is destined to be the mosquitoes."

That was almost 5 years ago, and at that time Social Democrat Harry Wilkens was at loggerheads still with most of his colleagues in the council because of this opinion. By now, most of the local political figures in the Lower Saxony rural kreis of Luechow-Dannenberg agree with Harry Wilkens' views about progress.

Since then they have come to be at loggerheads simply with a considerable portion of their own people--those from Gartow, for example, or Trebel, Gorleben, and Meetschow, as these villages in the Wendland area are called. Because there where an out-of-the-way corner of the FRG juts into the GDR in more or less the shape of an acute triangle, much has changed since the talk began about gigantic plans on the part of the nuclear power industry.

Originally the plan for this area called for an enormous radioactive-waste dump, officially called a "waste-disposal center": Above ground, a national reprocessing plant for spent nuclear fuels, below ground in the salt dome a facility to store for thousands of years that radioactive waste which is highly poisonous and no longer usable.

As in Wyhl, as in Brokdorf, the fear of atomic energy established itself conspicuously in and around Gorleben. The village took on a symbolic value for opponents of nuclear power plants as well as for the nuclear power industry. It lured Bonn political figures into giving lessons and delivering harangues, and nuclear power opponents from all over the Republic, peaceful as well as militant, into engaging in a permanent protest.

This unrest spread to the farmers. The Countrywomen's Association announced in the regional newspaper that the "time for passivity" was over: "We bear half of the responsibility for safeguarding home and health." In a protest gesture, their husbands drove in a tractor convoy to the residence of Minister President Ernst Albrecht, who no longer felt certain about the matter. Albrecht was the first German political figure to speak about "civil war" in connection with nuclear energy.

Of course, since then the plans have been canceled for the waste-disposal center--with a price tag of 10 billion marks--in the rural kreis of Luechow-Dannenberg. In May 1979 the Land Government recommended that "the reprocessing project not be pursued further." And whether the salt domes near Gorleben are capable of safely accommodating the waste for indefinite periods is disputed among scientists. If it ever proves possible to make a fairly sound prognosis at all, this will be done only 10 or 15 years from now--which is how long the mining investigation will take.

But, says Heinz Rathje, mayor of Gartow, where drilling is going on at present, Gorleben "is far from being finished with, although we are and have been only

a parade ground so far." But now at least, instead of the underground radioactive-waste dump for all times, called an "ultimate storage facility," what is going to be constructed is an above-ground "interim storage facility"--the minor solution, so to speak, one that leaves the major problems unsolved. Now the higher administrative court in Lüneburg has given its approval, and if the Federal Constitutional Court does not decide differently, Gorleben is assured of a radiant future after all.

Christian Democrat Rathje has done his part to bring this about. When in Hannover the major solution was set aside in favor of the minor one, the following was reported by the ELBE-JEETZEL-ZEITUNG, the only newspaper in this rural kreis: Gorleben is feasible as a site only "if an overwhelming majority of the elected political representatives of the Lüneburg-Dannenberg kreis expressly desire this interim storage facility."

That is what they did. The council of Rathje's greater township of Gartow, which at that time was made up of nine CDU and six SPD members, approved the land-use plan for the interim storage facility in May of last year, with one abstention, as did also the council in Gorleben, where two weeks later there was to be a vote on the development plan.

The vote would not turn out to be essentially different today, although in the local elections in September the opponents of nuclear power, who were organized into an "independent voting bloc," won 18 percent of the votes in the rural kreis on their first attempt, and thus 8 of 42 seats in the kreis assembly.

That took away votes from the SPD above all, and not as many from the CDU, which still has the absolute majority which it has enjoyed for decades--none of the waste-disposal plans, major or minor, has changed anything in this regard. In this region, the Union is proving to be as persevering as the recession, and that is a permanent condition there.

"Our lot is to toil," reads the rafter inscription of a farmhouse in Grabow, "and prosperity is from God." But at least the first half of this old adage is only partially true--currently, the unemployment rate is around 13 percent, and it has always been somewhat higher than elsewhere in the nation.

Industry consists mainly of the ball-bearing factory in Lüneburg, with 880 workers, and the Dannenberg branch of Continental Gummi-Werke AG, with 221 employees; over half of the industrial workers in this region earn their living in these places, with the others commuting as far as to Hamburg. Smaller firms have a difficult time of it. Since the beginning of the 1970's, half of those outfits which employed 10 to 20 people have folded.

Four times as many residents as on the national average are working in the fields or in the woods, but that does not pay well for either the employees or the employers.

Many farmsteads are in debt, and in the coming years every third farmer will have to give up. There is nothing to keep the young people in this region, where in any case the FRG is the most sparsely populated (41 people per square kilometer).

"In the past, the trend in the death rate has been very steady," the Swiss Prognosis Institute determined 3 years ago. But according to this institute, the "assessment of future fertility" is considerably "more problematic" for the coming years if the migration of people away from the area continues.

To be sure, among those who remain behind there has been a widening of that gulf which began to open up along with the introduction of the plans of the nuclear-power industry: The gulf between the majority, which sides with Harry Wilkens and Heinz Rathje and with a nuclear fuel storage facility, and a large minority, which instead of any radioactive-waste dump would prefer to see established a "Free Republic of Wendland," like they had in 1980 for a few weeks on the drilling grounds before the police cleared out the ecologist-pacifists from their village of huts.

Here, there are tensions and condemnations which are not sufficiently explained by voting percentages and party memberships.

When Lower Saxony leader Albrecht dropped the plans for the reprocessing plant, he had at his disposal the results of an opinion poll which had been kept under lock and key: According to this, over half of the inhabitants of Luechow-Dannenberg were against the large-scale waste-disposal center.

There is a lot of obstinacy left in this area. "The rural kreis of Luechow-Dannenberg is building here an interim storage facility for spent local political figures," it is written on the outer walls of the transformer station a few hundred steps from the hamlet of Grabow. And it is not out-of-towners who are making themselves heard there. Last spring, 400 farmers asked "if we are now living again in a nation" which in this matter "makes dictatorial demands," with their question spanning three columns in an advertisement in the ELBE-JEETZEL-ZEITUNG.

Now, at the beginning of the year and right after the pronouncement of the OVG's judgment in Lueneburg, opponents of nuclear power have torn down the fence around the interim storage grounds. "If you drill 100 holes in the sand," says a message which was discovered by the police during their subsequent search for clues, "you will find nothing but resistance."

The problem was not only the anxiety about the enormous nuclear project which years earlier was already upsetting cautious farmers and sowing discord among the local residents. There was also the manner in which the "German Company for Nuclear Fuel Reprocessing" (DWK) was working on the rural kreis in itself, buying up land first for the waste-disposal center, then for the interim storage facility--at 10 times the market value, and with a "special interested-party bonus of DM 3.0 per square meter."

It was an "offer to buy" which was restricted to 6 weeks, which the DWK submitted "in agreement with the Federal Government" supposedly because a "task of national importance" was involved here.

Only a few stubborn farmers, acting in concert with the largest landowner in the vicinity, Count Bernstorff, did not yield on this matter.

Whoever did not want to sell was made to suffer for this. For example, the plant security service shone lights onto farmsteads at night and jotted down car license numbers of holiday visitors, while yard areas were observed with binoculars. Not until the mayors of Gartow and Trebel complained vehemently to the DWK did the industry draw back its troops.

In the villages, where contracts used to be concluded with a "Du" and a handshake, the basis for doing business changed. Whoever had sold and had collected from the DWK was obligated--if he wanted to avoid paying taxes on the deal--to again acquire agricultural property within 2 years.

In the village, "people began to keep track," reported Rathje, "and now this means that one person has money and the other not." When a load of hay is collected for one's neighbor because the Elbe has flooded the pasture-lands, leaving some people without anything, "now one looks to see whether he cannot also buy the hay," says a resident of Tobring.

And the big landowner Fritz von Blottnitz explains it in this way: "Supposing that previously you took a lease on one acre of land for 1,000 marks--now you must fork out twice as much, and buying is no longer thinkable at all."

"What is bias?" asked the citizens' initiative in June of last year in an advertisement, and it immediately supplied the answer: "Councilman Hennings sold land to the DWK for millions of marks. Following that, Mr Hennings was biased when he helped to adopt the interim-storage resolution."

Where billions are at stake, millions flow easily. The rural kreis has debts totaling 30 million marks, and moreover it is constructing a new administrative building which will cost as much again. And then the DWK came in the nick of time: "The local-authority contracting parties are not to suffer any structural, economic, or financial hardships from the establishment of the interim storage facility. Therefore in compensation for expenses incurred for infrastructure measures, the DWK will pay a lump-sum, non-redeemable infrastructure assistance grant amounting to 5,000,000 marks."

However, the industry not only has shelled out this 5 million, but also has committed itself to paying to the greater township and to the kreis a million marks every year--all of this firmly agreed upon even before the kreis assembly voted on the interim storage facility; then in that body everybody was in favor of it, except for one person.

Since then the Gorleben citizens' initiative has styled this agreement an act of "corruption."

This charge is rejected by the CDU Landtag deputy Kurt-Dieter Grill, who because of the national importance of the project is empowered to travel to the Federal capital from time to time: "So, here I become quite tough and aggressive, I have to say that if it were not a question of nuclear power here--let us not kid ourselves for once--not a single soul would get worked up about it."

Because of the fact that with the altering of the land-use plan for an interim storage facility every citizen could put forward objections, the DWK promptly brought in specialist advisers for the municipality. Experts on such administrative subtleties were found at the Lower-Saxony Regional Development Company (Nileg), which is owned by the Land of Lower Saxony through its majority holding.

On behalf of the local political figures, these experts studied and read, made formulations which were legally incontestable, and smoothed away 1,500 objections by citizens within a few weeks. The fee for these "basic services" came to 47,500 marks, according to the cost estimate, with "special services" being extra.

Even the lawyers from Lueneburg, who in municipal-council sessions occasionally showed the local political figures what line to take by nodding or shaking their heads, sent the township of Gartow their bills; the industry paid for them.

"We are quite willing," DWK president Guenther Scheuten had assured the municipality beforehand in writing, "to reimburse the expenses of the greater township which may arise from this necessary engaging of third parties."

Not only that. At a cost of more than 100,000 marks the DWK saw to the stylish renovating of the old school in the village, with it subsequently renting the premises from the municipality as an "information house." From that time on, councilman Harry Wilkens has been conducting visitors through the house daily, informing them in his capacity as an employee of the DWK about the blessings of nuclear energy.

And it is also not the case that the local political figures would be left alone by Bonn. "People and the land in Luechow-Dannenberg are vigorous and sound," declared Federal Chancellor Helmut Schmidt--who unexpectedly arrived in the area prior to the important municipal-council sessions in Gartow and Gorleben--so that "the rugged Wends" would not "let themselves be dissuaded."

Opposition leader Helmut Kohl also came, affirming his "respect for those" who in this case "are putting their heads on the chopping block then and there." But even with fellow party members such moral suasion did not last very long. "Kohl is acutely aware" said Christian Democrat Rathje later concerning the intent of his chairman, "that this is quickly over, that in 5 hours he will be gone from here again."

In his opinion the visit of the federal chancellor was not particularly helpful either. "Whereas the chancellor says to you, well done, Mr Mayor, well done I say, the local resident in the front seat says: But my cranes, nothing must happen to them. You make sure nothing does."

Thus Heinz Rathje already prefers to depend on his colleagues on the council. "They say, Heinz, we will do that for Germany as well, since we must go through with it," and moreover: "Party politics do not play any role here."

For this reason also he puts up with abuse when it cannot be avoided. "Filthy servant of capitalists" they already have shouted at him, and at the voting on the land-use plan, he was obliged to hear from a teacher: "You have just committed a crime against mankind."

For Rathje, mankind is first of all Gartow, a village of a thousand souls, which until recently lived primarily by way of emergency grants from the State--public assistance for communities, so to speak. Whoever is able to manage anywhere else seeks his fortune elsewhere. Even though Count von Bernstorff, who lives in

the castle right behind the church, has sold not one of his roughly 6,000 hectares of land to the DWK, and with that has rejected about 37 million marks--the mayor does not view the count as the savior of the area.

He was once the largest employer in town--over 100 workers from the village earned their living on his estate and in the count's forests--but today the situation is different. Now a few men with power saws are sufficient to handle the forests, and the farm has on it a half dozen heavy tractors.

Petroleum dealer Rathje has pushed through the decision in favor of the interim storage facility in opposition to the count, who in striving "to preserve a natural scenery still in its pristine state" is bringing in scientists who are skeptical of nuclear energy. Debating with nuclear power opponents and professors has been difficult for the CDU man. "You do not know anything, and here there are people who have studied the subject," but "then you notice that these also do not know so thoroughly where things are heading."

"Was it then so bad," asked Rathje, "what we wanted? Just to say once and for all that we want a little money and to take care of our own affairs in the village. Not to go begging because our tax receipts are too small to finance a piece of road. Because we did not want our children to have to go to other towns because we do not have any jobs."

"And nevertheless," adds the mayor, "I would not do it again. Not at the price--at every wedding there is a row."

And probably there will be more of the same now that at last the nuclear fuel interim storage facility is being allowed to be built after all. "During the early morning and late shift, Monday to Friday," police vehicles are instructed to "patrol up and down the area of Gartow." Slogans on house walls are to be "reported immediately," and the houses of the mayor and various council members are to be checked for "suspicious persons in the vicinity."

The above order is hanging in a room of the former district court which, for at least a year now and independently of the local police station, has been housing a special unit--a troop of about 40 men, who are called "atomis" by the local residents.

"We are a mission-oriented police force," is the way police commissioner Will describes the job of his troops. "We are not geared toward run-of-the-mill offenses, but toward doing political educational work"--all this for the "duration of necessary protective measures in connection with the interim storage facility."

How long that will be is not known either by his colleagues in the Kripo (criminal investigation department), who likewise have been in Luechow for a good year now, or by the officers in the seventh, the political, inspectorship. And all of them are busy, since Marianne Fritzen, spokeswoman for the citizens' initiative of Luechow-Dannenberg, complains that "nowhere can we be by ourselves without the Kripo being there too."

When last year the songwriter Walter Mossmann took up his guitar in Behr Inn in Guelden for a solidarity meeting of the "Farmers' Emergency Association" and the

citizens' initiative, in order to play the song "Von da geh' ich aus" [I Start From There], the Kripo was already present, three men dressed in civvies.

There where "we occasionally have gone for 6 months without seeing a single policeman," says Pastor Mahlke from Gartow, sometimes four or five patrol cars drive up. In front of the "Trebelar Bauernstube," a meeting place for the nuclear power opponents, the nuclear police regularly jot down the license numbers of vehicles which do not come from the rural kreis.

Meanwhile the construction of a police barracks for 1,200 men is being planned in Luechow. The local political figures have fussily written down in their construction decision how one is supposed to picture the advantage of this concentration of policemen: "Through this increase in the proportion of younger people, there is a chance of offsetting the rise in the ratio of old people in the greater township."

12114

CSO: 5100/2085

ENVIRONMENTALISTS QUESTION SAFETY OF WASTE STORAGE

Frankfurt/Main FRANKFURTER RUNDSCHAU in German 3 Feb 82 p 4

[Article by Eckart Spoo: "'Projected Interim Storage for Nuclear Waste Is as Safe as the Titanic'; Environmentalists and Greens Accuse Politicians of Creating Waste Disposal Data Without Public Consent; Three Examples Cited"]

[Text] Hanover, 2 Feb--In front of journalists in Hanover representatives of several environmental and citizen action groups and of the "Greens" accused the politicians, authorities and enterprises responsible for waste disposal from nuclear power plants of creating more and more new data without any participation whatsoever by the citizens. As examples they cited the testing of the "Castor" type nuclear waste container at the Wuergassen nuclear power plant on the upper Weser, the construction of an interim storage facility at Gorleben and the preparations for final storage of radioactive waste in the "Konrad" metal mine near Salzgitter.

According to the Federal Government's original disposal concept, the spent, highly radioactive fuel elements are to be stored for an interim period in water basins in order to cool off. Because of strong safety objections by numerous scientists, but also for economic reasons, a decision was meanwhile taken in favor of a concept of dry storage and air cooling. Transportable steel containers, each filled with 3 tons of hot material, are to stand in ventilated rooms until the nuclear waste can be transferred to either a reprocessing plant or to an underground final storage facility.

According to information by the German Association for Reprocessing Nuclear Fuels (DWK), the North Rhine-Westphalian Ministry for Social Affairs granted permission at the end of last year for the first test of a "Castor" container and declared the permit to be immediately implementable. The container is already at Wuergassen and is to be loaded in the next few weeks. This experiment is to last for 2 years. Independent of the result of this test, which was not preceded by any authorization procedure in accordance with nuclear law, the DWK anticipates that the Federal Institute for Materials Testing and the Technical Inspection Office in an expert opinion will recommend the use of the container by May 1982 at the latest and that the Federal Physical-Technical Institute subsequently will grant the permit in accordance with nuclear law.

The first construction work on the planned container storage facility at Gorleben already began a few days ago. An attempt by six citizens of the Luechow-Dannenberg rural district to use legal channels in order to hold up construction work until the uncertainty of the interim storage method has been resolved, was successful at the State administrative court. The minister-president of Lower Saxony, Ernst Albrecht (CDU), subsequently stated that the judges must become aware of their responsibility. The Lueneburg higher administrative court then decided, along the lines of the DWK, that it would be up to a later inspection whether the interim storage concept would meet the requirements of the radiation protection law.

Physicist Helmut Hirsch of the Ecology Group in Hanover said that in agreement with other experts he did not regard it as guaranteed that the containers would not leak over a period of time. In particular, one would have to expect that during longer storage, corrosion problems would occur in the containers. Hirsch criticized the fact that the DWK's concept neither allowed nor even made it possible to filter the used air from the storage room or even to measure the radioactivity contained in it. Reinhold Wassmuth of the Luechow-Dannenberg Ecology Action Group pointed out that the legality of the site determination and the plans for construction supervision also have not yet been determined in court. That construction is nevertheless underway has undermined the belief of the environmental protectionists in the constitutional process. They regard the interim storage facility to be "as safe as the Titanic," he said.

The Working Group Against Nuclear Energy in Braunschweig expressed fear that the "Konrad" excavation facility, which belongs to the federally owned Salzgitter group of companies and has been rented for research purposes to the federal Society for Environmental Protection and Radiation Research for a period of 10 years from 1975, will become a ready-made final storage place for nuclear waste, without even so much as a plan determination procedure having been initiated up to now. Fifty miners are busy there making increasingly larger storage chambers. The spokesman for the working group expressed doubt in official statements that the mine is only intended as final storage for low- or medium-radioactive waste. He pointed out that the nuclear law does not differentiate between which kinds of nuclear waste may be deposited in final storage and which may not.

The environmental protectionists also complained that in Hildesheim, Salzgitter and Braunschweig several anti-nuclear power advocates in recent weeks have become victims of enlistment attempts by the Federal Office for the Protection of the Constitution.

11949

CSO: 5100/2097

BRIEFS

FUNDS FOR FAST BREEDER--Bonn, 20 Jan--(AP) After the Bavarian and Baden-Wuerttemberg Land governments consented to the financial participation of the electricity supply companies of their Lands in the fast breeder-type nuclear power plant under construction in Kalkar, Federal Research Minister Andreas von Buelow is of the opinion that the way has been cleared for the financial guarantee of this DM 5 million project. In Bonn Buelow greeted the agreement of the two Land governments and stated that this ensures the opportunity for the FRG to maintain its top position in the implementation of large-scale technical projects with respect to international competition. [Text] [Frankfurt/Main FRANKFURTER ALLGEMEINE in German 21 Jan 82 p 11] 11949

CSO: 5100/2097

BRIEFS

NUCLEAR WASTE LAW DEBATED--A controversy concerning the depositing of funds needed for the treatment of nuclear waste has arisen in the reform legislation concerning nuclear energy. The alternatives are the depositing of funds in the Bank of Finland under the control of society or leaving them for the use of the power companies with guarantees. During the debate on the bill the Finance Ministry, the Radiation Safety Institute, the Economic Planning Center, the Finnish Environmental Protection League, and the STTK [Finnish Federation of Technical Functionary Organizations] have leaned toward the depositing of funds in the Bank of Finland. Also Imatra Power has announced that it has nothing against this principle. It would have to deposit approximately 300 million markkas into the fund. Teollisuuden Voima [Industrial Power], on the other hand, is opposed to depositing the funds outside of the companies. By the year 2010 Industrial Power would have to deposit 2.2 billion markkas so that the funding outside of its control would be significantly greater than that of Imatra Power. Industrial Power's larger share of funding capital is the result of the fact that it will have to be responsible for the final disposition of its fuel waste also. The waste from Imatra Power will be sent to the Soviet Union. The Atomic Energy Consulting Committee has presented a compromise proposal according to which the power companies would be able to keep the necessary funds during the use period and only later would they be deposited in the Bank of Finland. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 16 Feb 82 p 3] 10576

GREECE

BRIEFS

NUCLEAR ENERGY POLICY--Strasbourg (ANA)--The PASOK Eurodeputy Christos Marcopoulos stated during the discussion which followed the reading of the report of socialist Eurodeputy Mrs Lisine, that the proposals for the establishment of nuclear power plants in the EEC member-states constitute an intervention in the domestic affairs of sovereign states. Mr Marcopoulos stressed that the member-states should be the ones to decide whether they should use nuclear energy in order to cover their own energy requirements. [Text] [Athens ATHENS NEWS in English 21-22 Feb 82 p 9]

CSO: 5100/5300

END

**END OF
FICHE
DATE FILMED**

 April 2, 1982